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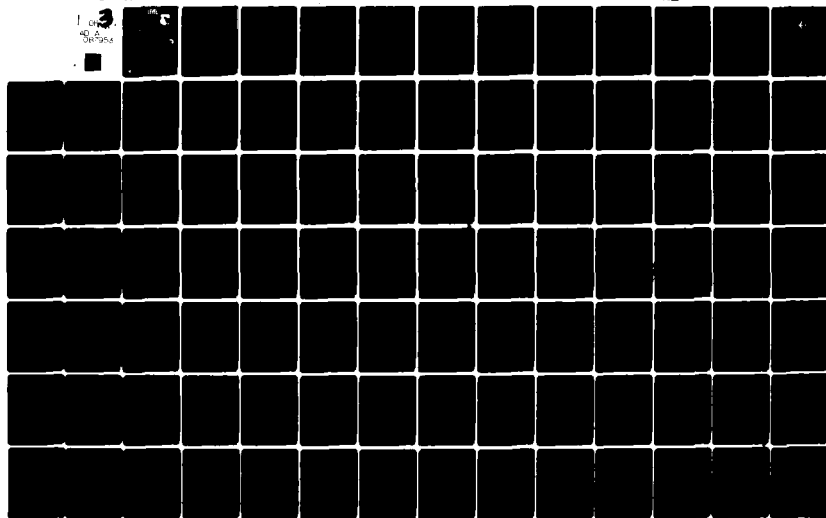
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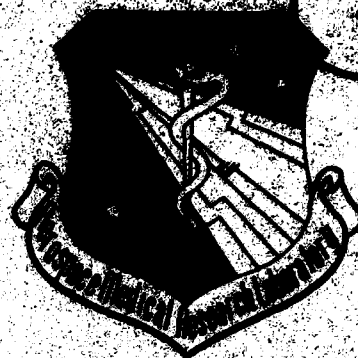
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Volume 119

LEVEL IV



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Volume 119
C-135B Aircraft, Near and Far-Field Noise

DECEMBER 1979

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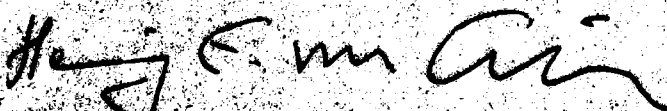
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FOR THE COMMANDER



HENNING E. VON GIERKE

Director

Bioengineering and Biomechanics Division
Aerospace Medical Research Laboratory

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levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

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PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723107 Technology to Define and Assess Environmental Quality of Noise From Air Force Operations and 723108 Crew Safety in Operational Noise Environments.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, 2nd Lt. Thomas Rau, Mr. Robert Lee and Mr. Jerry Speakman for their assistance in acquiring the raw data, Mr. Henry Mohlman, Mr. Keith Kettler and Mr. Fred Lampley of the University of Dayton for assistance in the mechanics of data processing and Mrs. Norma Peachey for assistance in typing and preparation of the graphics.

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INTRODUCTION

The USAF C-135B is a long-range, high-performance, transport aircraft powered by four TF33-P-5 turbofan engines. The aircraft was manufactured by the Boeing Company and the engines by United Aircraft, Pratt and Whitney Division.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the C-135B aircraft.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, types of data presented, measurement procedures, instrumentation, data processing, definitions and quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15°C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2* (references 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.
2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50(2), AMRL, WPAFB, OH, 1975.

NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the C-135B aircraft during ground runup operations of its turbofan engines. For these tests, the aircraft was located on a concrete parking apron at Wright-Patterson AFB along with other similar aircraft. Table 1 gives the engine power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all the noise samples on magnetic tape. During analysis of each sample, he determined the root-mean-square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location.

Figure 1 shows the eleven numbered near-field locations where ground crews are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations in the near-field are difficult since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test conditions A.

RESULTS

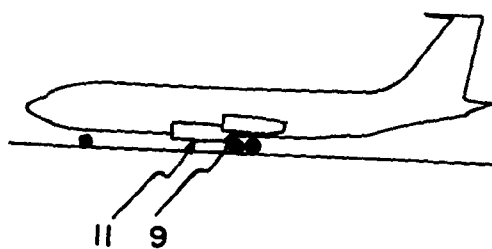
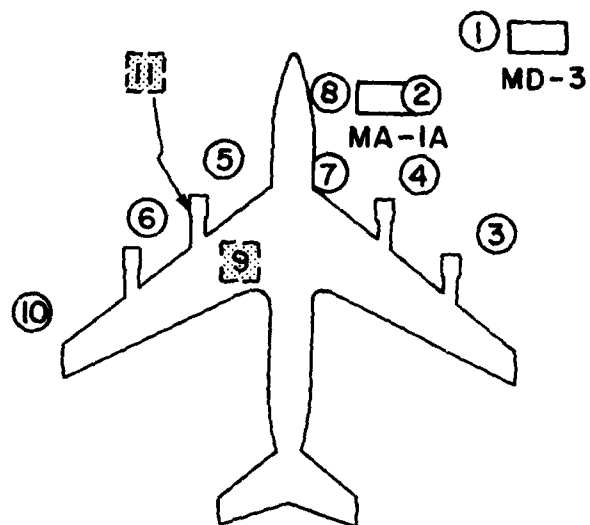
The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the C-135B aircraft at the eleven ground crew locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measures given in Table 3 which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are for the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

TABLE 1
MEASUREMENT LOCATIONS AND TEST CONDITIONS
FOR NEAR-FIELD NOISE MEASUREMENT

C-135B Aircraft, Ground Runup, Wright-Patterson AFB, OH
31 October 1977
Tail # 624133

Ground Crew Location	
1	MD-3 Operator
2	MA-1A Operator
3	Engine #4 Start
4	Engine #3 Start
5	Engine #2 Start
6	Engine #1 Start
7	Air Hose Removal
8	Electric Disconnect
9	Wheel Chock Pull
10	Wing Marshal
11	Trim Adjustment
Aircraft Engine Operation	
A	MD-3
B	MD-3 and MA-1A
C	Engine #3 Idle
D	Engines #3 and 4 Idle
E	Engines #2, 3, and 4 Idle
F	All Engines Idle
G	All Engines 85% RPM
H	Engine #2 at Military Rated Thrust
Meteorology	
Temperature	12.2 C
Bar Pressure	0.744 M Hg
Rel Humidity	68.5 %
Wind - Speed	5.1 M SEC (10 KTS)
- Direction	150 Deg



**Figure 1. Near-Field Measurement Locations
at Wright-Patterson AFB OH**

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired far-field noise data on two occasions: five different power settings (excluding 97% RPM) on 25 April and a 97% RPM power setting on 25 July 1979. Figure 2 shows the ground runup pad, ground cover, aircraft orientation and the 19 microphone measurement sites on a semicircle used for these tests. The center of the 75 meter radius semicircle used in surveying the TF33-P-5 engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through the inboard engines' exhaust-nozzle exits. The ground runup area did not have a blast deflector; therefore, the engines' exhaust were in a "free-flow" condition.

Table 4 provides cockpit readouts of some engine characteristics (% RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of the source where the sound wavefronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand-held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone.

RESULTS

Table 5 lists the overall and $1/3$ octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the C-135B aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power level and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure which describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

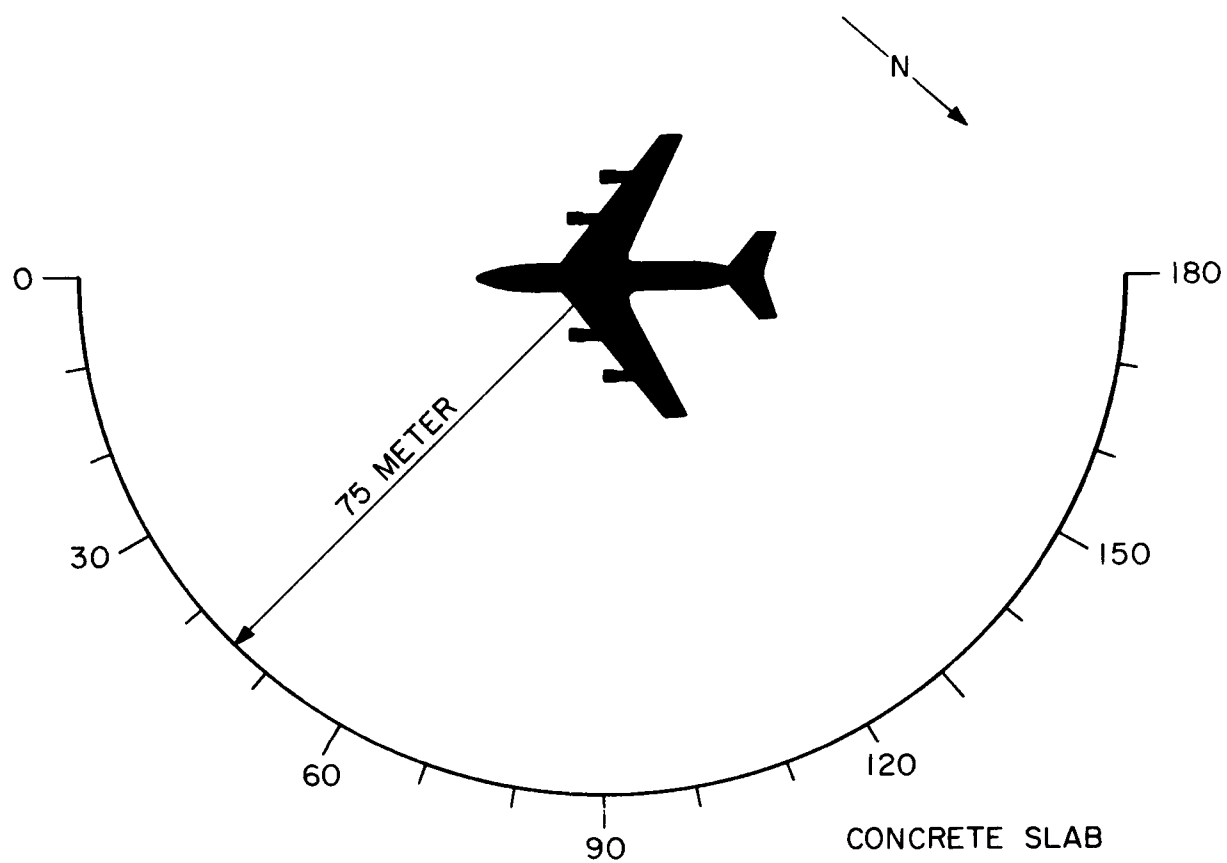


Figure 2. Far-Field Measurement Locations at Wright-Patterson AFB OH

Estimates of noise characteristics for intermediate power settings (e.g., 88% engine) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

No data are presented at the 170 and 180 degree locations at idle power nor at the 160, 170, and 180 degree locations at power settings above idle because of turbulent air flow behind the aircraft. Typical A-weighted levels for these angles are 10 to 20 dBA below those at the last measured location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low (e.g., Table 5 at idle power).

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)														IDENTIFICATIONS	
2														OMEGA 3.2	
1/3 OCTAVE BAND														TEST 77-001-002	
NOISE SOURCE/SUBJECT: (OPERATION:)														RUN 01	
C-135B AIRCRAFT ()														18 JAN 79	
GROUND CREW ()														PAGE F1	
NEAR FIELD NOISE LEVELS ()															
LOCATION/CONDITION															
1/A 2/B 4/C 3/D 5/E 6/F 7/F 8/F 9/F 10/F 11/F 10/G 11/H															
FREQ (HZ)															
25	71	79	79	84	80	86	93	88	85	86	89	98	104		
31.5	73	80	81	89	83	87	93	94	90	89	90	98	100		
40	81	84	83	88	87	89	94	96	92	90	93	101	103		
50	93	85	85	88	88	90	96	95	91	89	96	101	103		
63	95	87	88	87	88	87	93	92	89	88	93	102	106		
80	90	87	91	86	87	87	90	90	86	84	92	101	109		
100	102	96	94	92	93	94	96	93	92	90	103	99	106		
125	102	98	96	93	94	91	94	95	94	91	97	101	105		
160	94	98	92	92	90	90	92	94	95	91	95	101	106		
200	101	96	92	89	91	90	100	95	93	90	95	101	107		
250	103	93	92	88	91	91	96	95	92	89	96	102	104		
315	99	96	93	88	92	91	93	93	92	87	98	103	105		
400	95	100	98	90	94	92	95	95	98	90	100	105	108		
500	90	96	100	97	99	103	97	98	98	92	102	102	113		
630	89	93	93	96	100	100	98	96	95	91	101	103	113		
800	91	91	97	94	97	97	97	94	93	91	102	102	113		
1000	86	90	98	99	101	102	100	97	96	94	105	106	115		
1250	84	88	96	99	101	100	100	96	96	92	103	108	116		
1600	86	90	96	102	101	102	100	97	99	93	102	110	118		
2000	87	92	98	106	109	108	107	104	108	100	112	114	123		
2500	83	92	96	99	103	101	102	98	100	94	104	126	132		
3150	84	96	99	101	105	104	103	101	101	98	105	114	122		
4000	83	96	100	100	103	102	105	100	101	98	106	116	125		
5000	81	95	98	99	101	100	101	99	99	96	104	121	131		
6300	80	97	97	98	100	100	100	98	98	95	105	119	127		
8000	76	107	100	100	100	99	100	100	103	95	104	121	131		
10000	75	110	101	101	100	99	101	101	106	96	105	120	130		
OVERALL	110	113	111	112	114	114	114	112	113	108	117	130	138		
LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.															

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)													
2													
OCTAVE BAND													
IDENTIFICATION:													
OMEGA 3.2													
TEST 77-001-002													
NOISE SOURCE/SUBJECT: (OPERATION:													
C-135B AIRCRAFT													
GROUND CREW													
NEAR FIELD NOISE LEVELS													
PAGE J1													
LOCATION/CONDITION													
1/A 2/B 4/C 3/D 5/E 6/F 7/F 8/F 9/F 10/F 11/F 10/G 11/H													
FREQ (HZ)													
31.5	82	86	86	92	89	92	98	99	95	93	96	104	107
63	98	91	93	92	92	93	98	98	94	92	99	106	111
125	105	102	99	97	97	97	99	99	99	95	104	105	119
250	106	100	97	93	96	95	102	99	97	94	101	107	110
500	97	102	103	100	103	105	102	101	102	96	106	108	117
1000	93	95	102	103	105	105	104	101	100	97	108	111	120
2000	90	96	102	108	110	110	109	106	109	102	113	126	133
4000	88	100	104	105	108	107	108	105	105	102	110	123	132
8000	82	112	104	105	105	104	105	105	100	100	109	125	134
OVERALL	110	113	111	112	114	114	114	112	113	108	117	130	138

TABLE: MEASURES OF HUMAN NOISE EXPOSURE											IDENTIFICATION:
3											
NOISE SOURCE/SUBJECT: (OPERATION:)											OMEGA 3.2
C-135B AIRCRAFT	(										TEST 77-001-002
GROUND CREW	(										RUN 01
NEAR FIELD NOISE LEVELS	(										16 JAN 79
	(										PAGE H1
LOCATION/CONDITION											
1/A	2/B	4/C	3/D	5/E	6/F	7/F	8/F	9/F	10/F	11/F	10/G 11/H
HAZARD/PROTECTION											
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR											
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR											
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)											
NO PROTECTION											
OASLC	109	111	110	111	114	113	111	112	107	117	129 137
OASLA	101	111	110	112	115	114	111	113	107	117	130 138
T	25	4.5	5	3.8	2.2	2.7	4.5	3.2	9	P	P
MINIMUM QPL EAR MUFFS											
OASLA*	87	89	85	85	87	87	86	87	82	91	103 112
T	285	202	404	404	285	285	339	285	679	143	18 3.8
AMERICAN OPTICAL 1700 EAR MUFFS											
OASLA*	82	86	81	80	82	81	82	81	76	86	98 107
T	679	339	807	960	679	807	679	571	960	339	42 9
V-51R EAR PLUGS											
OASLA*	79	83	83	83	85	85	82	84	78	88	99 107
T	960	571	571	571	404	404	679	480	960	240	36 9
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS											
OASLA*	65	73	69	70	72	71	69	71	65	75	87 96
T	960	960	960	960	960	960	960	960	960	960	285 60
H-133 GROUND COMMUNICATION UNIT											
OASLA*	76	83	82	84	87	86	83	85	80	89	103 110
T	960	571	679	480	285	339	571	404	960	202	18 5
COMMUNICATION											
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)											
PSIL	93	98	102	104	106	105	103	104	98	109	115 123
ANNOYANCE											
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB)											
TONE CORRECTION (C IN DB)											
PNLT	117	125	125	127	130	130	127	130	124	134	148 154
C	1	1	2	2	2	2	2	3	2	3	4 3

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.
P ADDITIONAL EAR PROTECTION REQUIRED.

TABLE 4
TEST CONDITIONS
FOR FAR-FIELD MEASUREMENTS

C-135B Aircraft, Ground Runups, Wright-Patterson AFB, OH
25 April & 25 July 1979
Tail # 612662

Aircraft Engine Operation	
Idle	All Engines 58 % RPM NF (Fan Speed) 280 C EGT (Exhaust Gas Temperature) 1.05 EPR (Engine Pressure Ratio) 1000 LBS/HR FF (Fuel Flow)
70% RPM	Engine #2, Others Idle 70 % RPM NF 275 C EGT 1.06 EPR 1350 LBS/GR FF
80% RPM	Engine #2, Others Idle 80 % RPM NF 280 C EGT 1.11 EPR 2100 LBS/GR FF
90% RPM	Engine #2, Others Idle 90 % RPM NF 330 C EGT 1.27 EPR 4000 LBS/HR FF
97% RPM	Engine #2, Others Idle 97.4 % RPM NF 455 C EGT 1.6 EPR 8600 LBS/HR FF
Maximum Power	Engine #2, Others Idle 101 % RPM NF 510 C EGT 1.8 EPR 9500 LBS/HR FF
Meteorology:	
For All Data Except 97% RPM	
Temperature	17 C
Bar Pressure	.730 M Hg
Rel Humidity	80 %
Wind - Speed	3.5 M/SEC (7 KTS)
- Direction	220 Deg
For 97% RPM Data	
Temperature	22 C
Bar Pressure	.739 M Hg
Rel Humidity	97 %
Wind - Speed	5.1 M/SEC (10 KTS)
- Direction	210 Deg

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																
1/3 OCTAVE BAND																
DISTANCE = 75 METERS																
NOISE SOURCE/SUBJECT:																
(OPERATION:)																
(IDLE POWER)																
(58% RPM)																
(ALL ENGINES)																
(FREE FLOW)																
FAR FIELD NOISE																
TEMP = 17 C																
BAR PRESS = .730 M HG																
REL HUMID = 80 %																
METEOROLOGY:																
TEST AN-025-001																
RUN 01																
PAGE 2																
IDENTIFICATION:																
OMEGA 1.4																
TEST AN-025-001																
PAGE 2																
FREQ (HZ)																
25	67<	69<	65<	66<	66<	66<	66<	66<	66<	66<	66<	66<	66<	66<	66<	66<
31.5	71	71	71	70<	70<	70<	70<	70<	70<	70<	70<	70<	70<	70<	70<	70<
40	75	74	76	76	76	77	73	73	73	73	73	73	73	73	73	73
50	76	76	77	76	77	75	80	81	81	81	81	81	81	81	81	81
63	71<	71<	71<	71<	71<	72<	71<	71<	71<	71<	71<	71<	71<	71<	71<	71<
80	69<	71<	71<	70<	71<	71<	71<	71<	71<	71<	71<	71<	71<	71<	71<	71<
100	75<	76<	75<	76<	74	74	78	80	81	81	81	81	81	81	81	81
125	76<	77	75<	74<	74<	74<	74<	74<	74<	74<	74<	74<	74<	74<	74<	74<
160	76	78	76	76	75	76	76	75	75	75	75	75	75	75	75	75
200	76	76	75	74	74	76	75	75	75	75	75	75	75	75	75	75
250	75	75	75	73	75	76	76	74	74	74	74	74	74	74	74	74
315	76	77	75	75	74	75	74	74	74	74	74	74	74	74	74	74
400	78	80	79	79	77	78	77	77	77	77	77	77	77	77	77	77
500	84	85	85	85	83	82	80	80	80	80	80	80	80	80	80	80
630	87	87	87	86	84	83	81	81	81	81	81	81	81	81	81	81
800	81	81	82	81	80	80	77	78	78	78	78	78	78	78	78	78
1000	84	85	86	85	83	83	80	80	80	80	80	80	80	80	80	80
1250	83	83	84	84	82	83	81	81	81	81	81	81	81	81	81	81
1600	84	82	83	83	82	84	82	82	82	82	82	82	82	82	82	82
2000	88	88	87	89	86	87	86	86	86	86	86	86	86	86	86	86
2500	85	86	85	86	83	85	85	85	85	85	85	85	85	85	85	85
3150	85	84	84	84	82	82	81	81	81	81	81	81	81	81	81	81
4000	80	80	80	80	79	79	77	77	77	77	77	77	77	77	77	77
5000	82	81	81	81	79	80	78	77	75	75	75	75	75	75	75	75
6300	78	77	77	78	75	76	75	73	72	72	72	72	72	72	72	72
8000	76	75	75	76	73	74	73	72	72	72	72	72	72	72	72	72
10000	72	70	70	71	68	69	68	67	66	66	66	66	66	66	66	66
OVERALL	95	96	95	96	94	94	93	93	91	90	92	93	93	93	90	85

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

[illegible]

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)															IDENTIFICATION:				
1/3 OCTAVE BAND															OMEGA 1.4				
DISTANCE = 75 METERS															TEST AN-025-001				
NOISE SOURCE/SUBJECT:															RUN 03				
(															TEMP = 17 C				
(															80% RPM, ENGINE NO. 2				
(															BAR PRESS = 730 M HG				
(															OTHER ENGINES IDLE				
(															REL HUMID = 80 %				
(															FREE FLOW				
(															PAGE 2				
FREQ															ANGLE (DEGREES)				
(HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	72<	74	74	74	70<	73<	72<	74	73<	72<	74	75	77	76	76	77			
31.5	74	75	74	74	75	76	75	76	77	78	78	78	79	81	79	79			
40	76	76	77	78	78	80	78	80	81	81	81	82	81	82	83	82			
50	79	81	81	81	81	82	82	82	82	83	84	85	84	84	85	83			
63	76	76	76	79	80	79	80	81	80	81	83	83	83	85	83	81			
80	74	74	76	78	79	79	80	79	80	81	83	84	84	86	83	80			
100	76<	78	78	80	80	80	82	82	81	82	84	84	83	86	84	81			
125	79	80	79	80	80	82	82	81	80	81	81	82	82	85	83	78			
160	81	81	81	81	80	81	82	80	81	81	81	83	83	85	83	77			
200	80	80	80	80	80	80	81	80	80	81	81	81	82	82	81	75			
250	78	79	80	80	80	80	80	79	78	79	79	81	84	83	79	74			
315	79	79	79	79	79	79	80	79	78	79	80	79	81	81	80	73			
400	80	82	82	82	82	82	82	81	80	80	81	81	81	82	80	75			
500	85	84	84	84	83	82	82	80	80	79	80	80	80	80	79	73			
630	86	86	87	86	85	82	83	79	80	79	80	79	80	80	79	73			
800	84	84	86	86	87	84	85	81	82	80	82	80	81	80	80	73			
1000	91	94	96	96	96	90	91	86	85	83	84	82	83	83	82	76			
1250	83	89	90	91	92	89	91	87	84	82	84	83	84	83	82	75			
1600	88	88	89	89	90	89	87	83	83	83	84	84	86	82	79	73			
2000	94	93	94	94	96	98	99	97	91	91	94	94	98	90	85	81			
2500	91	90	91	92	92	93	92	90	85	85	87	88	89	84	79	75			
3150	92	89	91	91	92	92	91	89	86	86	87	88	90	84	80	75			
4000	91	90	92	93	93	94	92	91	93	91	96	92	96	85	82	76			
5000	90	89	91	91	92	93	91	89	89	89	90	90	93	84	81	77			
6300	89	90	90	90	91	91	90	89	88	89	90	89	91	83	80	75			
8000	86	86	87	88	89	89	87	86	86	86	87	86	90	82	78	73			
10000	83	81	82	83	84	83	83	82	82	83	84	82	86	77	74	69			
OVERALL	101	101	102	102	103	103	103	101	99	99	101	100	103	98	96	92			

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 1 MEASURED SOUND PRESSURE LEVEL (DB)																
1/3 OCTAVE BAND																
DISTANCE = 75 METERS																
NOISE SOURCE/SUBJECT:																
(OPERATION:) METEOROLOGY:)																
(C-135B AIRCRAFT) TEMP = 17 C)																
(TF33-P-5) BAR PRESS = .730 M HG)																
(FAR FIELD NOISE) REL HUMID = 80 %)																
(FREE FLOW))																
FREQ																
(HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
25	76	76	78	75	78	78	80	80	80	81	81	81	83	86	86	87
31.5	79	78	78	80	79	81	81	80	81	84	83	84	84	90	91	90
40	80	81	79	80	81	82	81	82	84	86	86	88	90	91	93	92
50	82	82	81	82	82	84	85	85	84	87	88	88	91	93	94	92
63	81	82	83	84	85	85	85	85	86	88	90	91	93	96	95	92
80	82	81	84	84	85	86	87	87	87	89	91	93	96	99	99	90
100	83	84	85	86	86	87	87	87	88	90	92	94	96	100	98	91
125	84	86	86	88	87	87	87	88	88	90	92	93	95	100	98	87
160	86	87	88	88	89	88	88	88	89	91	92	93	95	98	95	85
200	86	87	88	89	88	88	88	88	89	90	92	93	95	96	93	84
250	85	88	88	87	88	88	89	87	88	87	90	91	95	93	91	82
315	85	86	87	87	89	88	88	88	86	87	88	90	92	92	89	81
400	87	88	89	90	92	91	91	89	89	89	91	90	91	90	89	82
500	87	88	89	89	89	90	90	89	88	87	88	88	90	90	87	80
630	89	89	90	90	90	89	89	87	87	87	89	88	89	88	86	79
800	88	88	89	89	89	89	89	87	86	87	88	88	88	86	85	79
1000	88	90	92	90	91	89	89	88	87	87	87	88	88	85	84	78
1250	93	94	93	94	95	95	93	92	90	90	92	91	89	86	85	80
1600	94	93	94	96	95	94	93	92	90	90	91	90	89	85	83	77
2000	93	94	94	95	95	95	94	93	90	90	91	92	91	86	84	78
2500	97	98	98	100	100	101	100	98	98	99	102	101	97	90	88	82
3150	101	102	102	103	103	105	103	102	100	99	102	103	98	92	90	85
4000	91	92	93	92	94	94	94	92	91	91	93	93	89	84	82	77
5000	94	95	96	96	97	97	97	96	95	96	97	97	93	86	84	79
6300	93	94	95	95	95	96	96	95	94	95	95	97	92	86	84	78
8000	91	92	92	93	94	94	94	94	93	95	95	96	91	85	83	77
10000	87	88	89	89	90	90	90	90	89	91	91	92	88	82	80	74
OVERALL	106	106	107	107	108	109	108	107	106	106	108	109	107	108	106	100

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)															IDENTIFICATION:				
1/3 OCTAVE BAND																			
DISTANCE = 75 METERS																			
NOISE SOURCE/SUBJECT:															OMEGA 1.4				
(OPERATIONS:															TEST AN-025-001				
(97% RPM, ENGINE NO.2															RUN 06				
(OTHER ENGINES IDLE																			
(FREE FLOW																			
C-135B AIRCRAFT															TEMP = 22 C				
TF33-P-5															BAR PRESS = .739 H HG				
FAR FIELD NOISE															REL HUMID = 97 %				
															PAGE 2				
FREQ	ANGLE (DEGREES)																		
(HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	81	83	82	83	83	83	88	88	88	89	87	89	92	96	96	96	98		
31.5	82	84	84	84	86	88	88	87	87	89	89	90	94	99	99	99	97		
40	84	85	86	85	85	86	88	89	89	91	92	92	97	102	102	100			
50	85	86	86	88	89	88	92	91	91	92	93	95	100	103	105	100			
63	88	86	87	89	90	91	90	92	92	92	94	96	97	103	108	106	99		
80	89	87	89	90	90	90	92	94	94	95	98	101	105	110	108	99			
100	89	88	91	90	90	92	97	97	96	97	99	103	108	113	108	94			
125	90	91	91	93	93	93	96	98	96	98	100	104	110	115	107	95			
160	92	92	92	94	93	95	95	96	98	99	101	103	110	116	106	95			
200	92	93	95	94	95	95	96	97	97	100	102	103	107	114	104	95			
250	94	94	95	96	96	95	97	97	98	99	101	104	106	112	102	94			
315	92	93	94	95	96	95	97	97	96	99	100	102	104	107	98	91			
400	93	94	95	96	96	96	97	96	96	98	99	102	102	104	96	88			
500	93	93	94	96	96	95	97	96	97	97	98	99	99	102	95	86			
630	91	93	94	94	94	93	95	94	94	95	98	98	97	99	93	85			
800	90	92	93	94	94	94	95	94	95	96	98	98	97	98	92	83			
1000	90	91	93	94	92	92	93	92	92	94	96	96	97	96	91	82			
1250	90	93	94	95	93	94	94	92	92	94	96	97	96	95	90	80			
1600	93	94	96	96	96	98	96	96	95	95	98	97	96	95	88	80			
2000	93	94	96	96	96	98	98	97	96	97	98	99	96	95	89	81			
2500	93	93	94	96	96	97	97	98	97	97	99	99	95	94	87	80			
3150	100	100	102	104	104	107	107	108	107	111	111	109	104	99	93	86			
4000	96	97	98	99	99	100	101	102	102	104	105	106	103	99	92	85			
5000	92	92	94	94	95	96	98	98	97	98	99	99	96	94	89	81			
6300	94	94	96	97	97	99	101	104	102	103	104	101	98	94	89	80			
8000	91	92	93	94	94	96	98	100	98	101	102	101	97	96	90	82			
10000	88	89	91	92	92	95	96	98	97	100	101	99	95	93	87	79			
OVERALL	106	107	108	109	110	111	112	113	112	115	115	116	118	122	116	108			

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)		IDENTIFICATION:																		
1/3 OCTAVE BAND		OMEGA 4.4																		
DISTANCE = 75 METERS		TEST AN-025-001																		
NOISE SOURCE/SUBJECT:		OPERATION:				METEOROLOGY:														
C-135B AIRCRAFT		MAXIMUM POWER ENGINE NO.2				TEMP = 17 C				BAR PRESS = .730 M HG										
TF33-P-5		OTHER ENGINES IDLE				REL HUMID = 80 %				22 MAR 79										
FAR FIELD NOISE		FREE FLOW				PAGE 2														
FREQ		ANGLE (DEGREES)																		
(HZ)		0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	79	82	83	83	82	85	86	86	88	89	92	89	90	93	97	100	99			
31.5	83	84	86	85	85	88	86	88	89	89	90	90	92	97	101	104	102			
40	86	86	86	85	89	87	88	88	88	91	91	92	96	102	104	106	105			
50	87	88	87	89	90	91	92	92	92	94	94	95	96	102	106	109	104			
63	90	90	89	91	90	92	93	92	94	94	96	98	101	105	112	111	103			
80	90	89	91	91	92	93	92	94	97	97	97	100	104	109	113	114	103			
100	93	92	93	93	94	93	96	97	98	99	99	102	106	112	117	114	103			
125	93	95	93	95	97	96	97	100	100	100	100	103	107	115	118	114	102			
160	94	96	96	98	97	96	98	98	100	102	102	103	107	114	120	114	101			
200	94	96	96	97	98	98	98	98	103	100	102	105	108	112	119	113	102			
250	94	95	96	98	99	98	98	98	98	100	101	104	108	111	116	110	100			
315	94	95	95	98	99	99	99	99	99	99	101	104	107	110	114	108	99			
400	95	95	96	98	99	99	99	99	99	100	101	104	106	108	110	105	97			
500	95	95	96	97	98	99	99	99	99	99	101	103	104	106	107	102	96			
630	94	94	96	97	97	97	98	97	97	98	99	102	103	105	105	100	94			
800	94	93	95	97	97	97	98	98	97	98	99	102	103	104	104	99	92			
1000	93	93	94	96	96	97	96	96	96	97	98	100	101	103	102	97	90			
1250	93	93	93	95	95	95	97	96	96	96	97	99	101	101	100	96	88			
1600	94	94	95	96	96	96	97	96	95	95	97	99	101	100	99	96	87			
2000	94	94	95	96	97	97	97	97	96	96	98	98	101	100	98	96	87			
2500	93	93	94	95	96	96	96	96	96	95	96	98	100	98	96	93	85			
3150	95	96	96	97	98	99	101	101	101	102	104	105	106	100	97	95	87			
4000	96	99	98	99	99	99	101	104	104	104	107	108	109	101	97	96	87			
5000	93	92	93	94	96	96	96	97	97	98	98	100	101	99	96	94	86			
6300	90	90	92	93	94	95	96	96	97	98	99	99	100	95	93	91	83			
8000	92	92	94	96	96	96	96	98	100	101	101	104	103	97	94	93	85			
10000	85	86	87	89	90	91	93	94	96	97	97	98	98	92	91	88	81			
OVERALL	107	108	108	110	110	111	111	111	112	113	114	116	118	122	126	122	113			
LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.																				

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

G-135B AIRCRAFT

TF33-P-5

FAR FIELD NOISE

IDENTIFICATION:

OMEGA 1.4

TEST AN-025-001

RUN 01

22 MAR 79

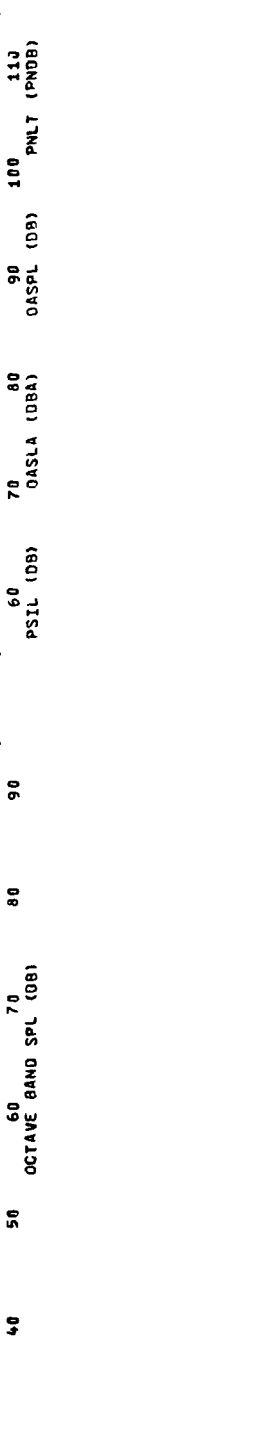
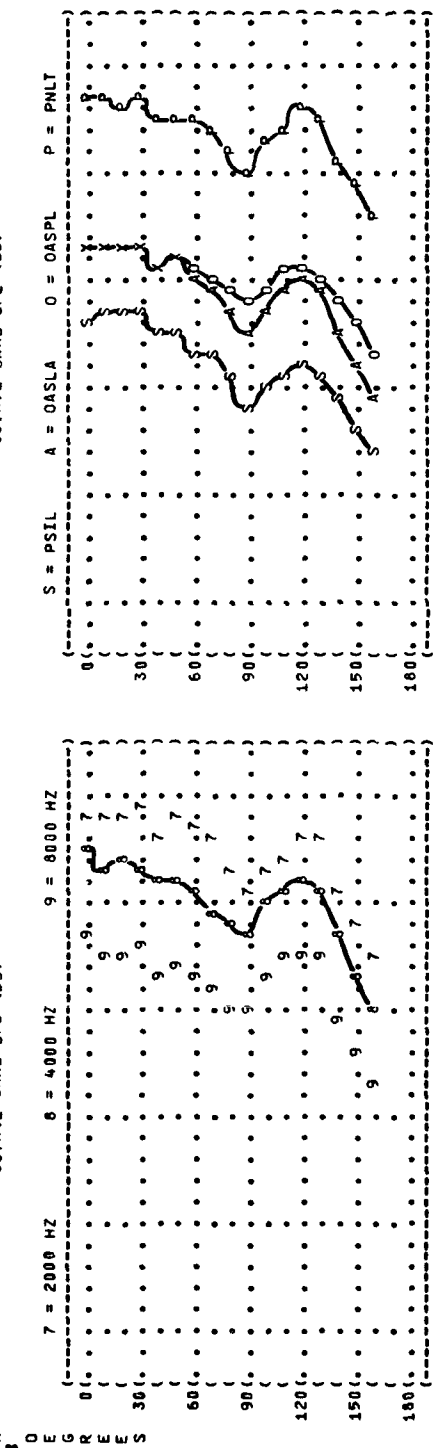
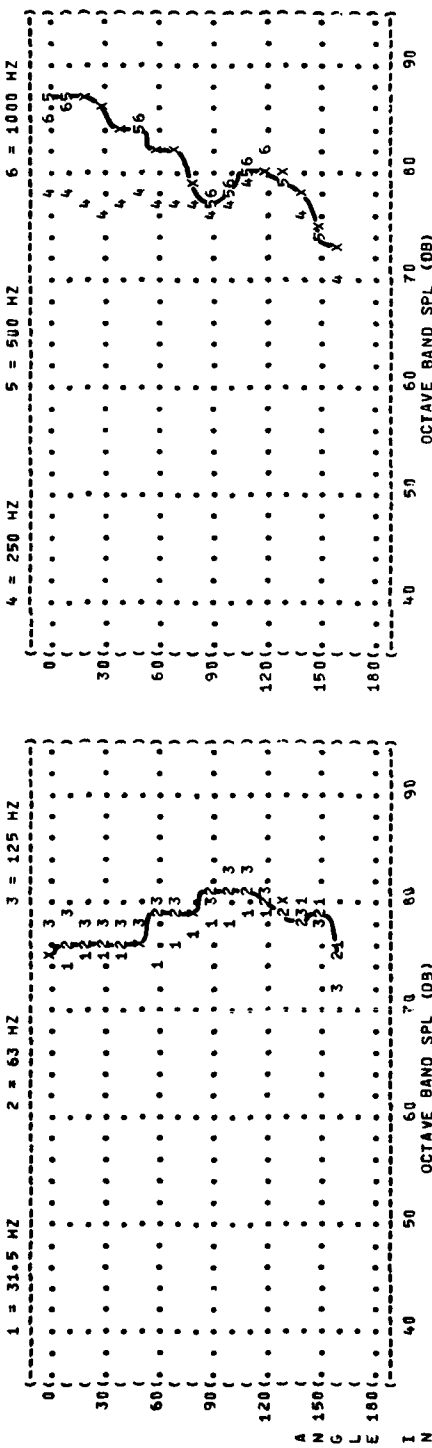
PAGE 6

METEOROLOGY:

TEMP = 15 C

BAR PRESS = 760 M HG

REL HUMID = 70 %



IN

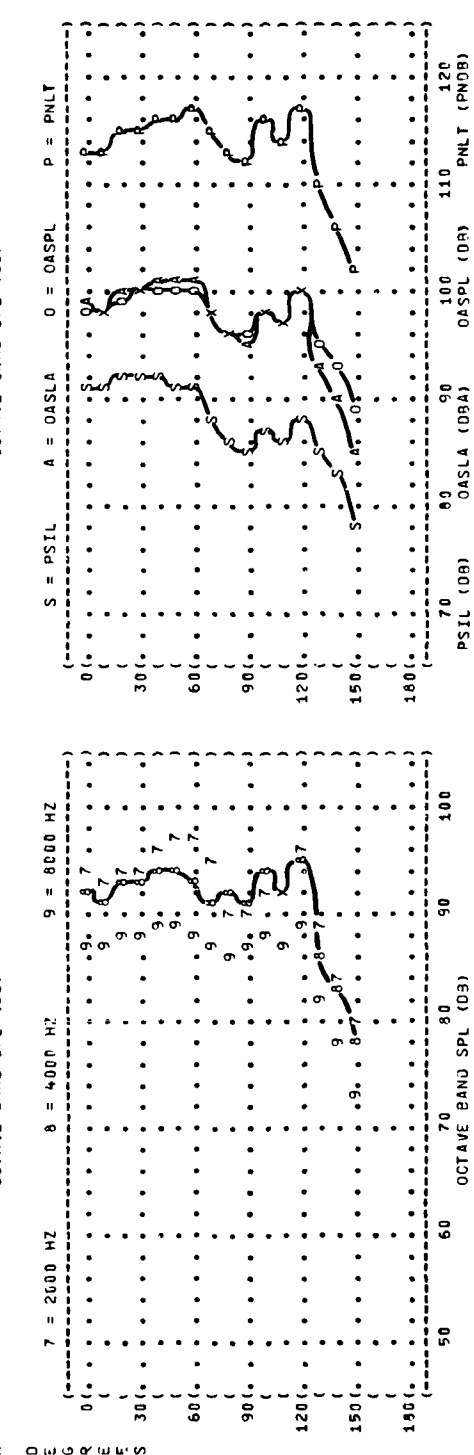
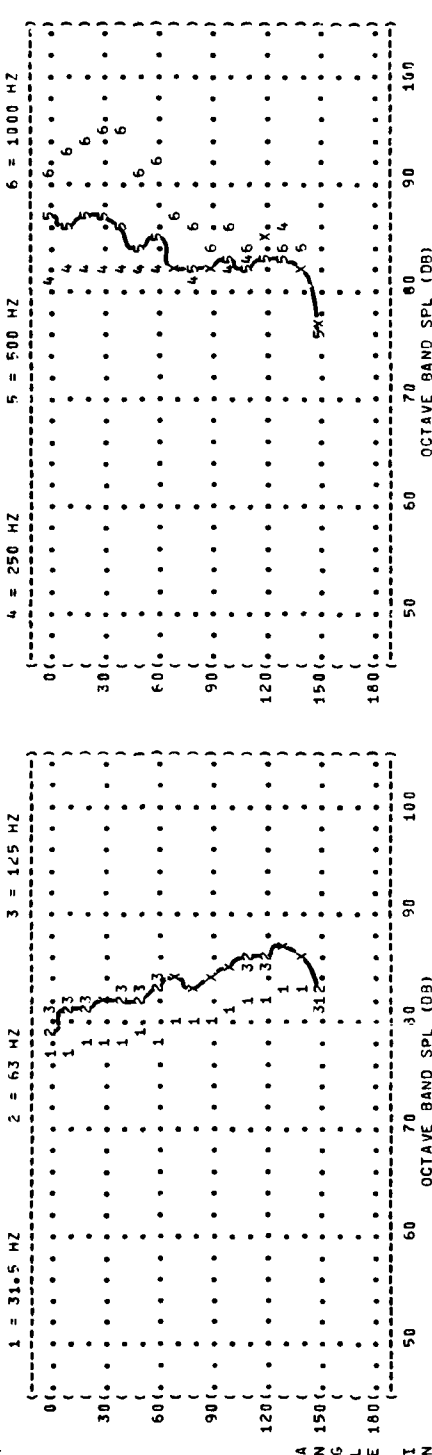
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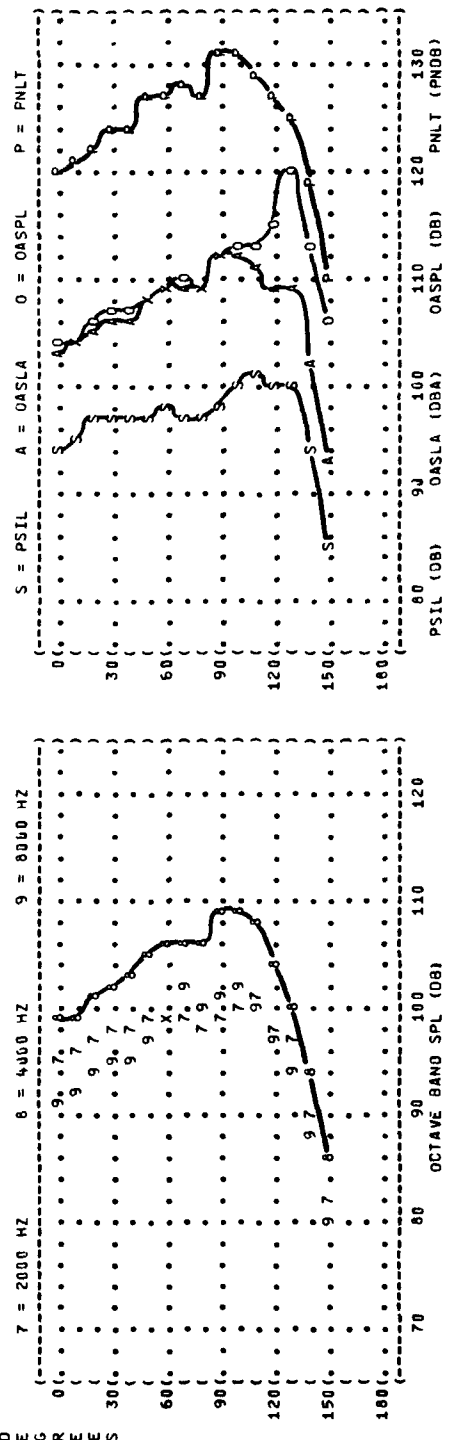
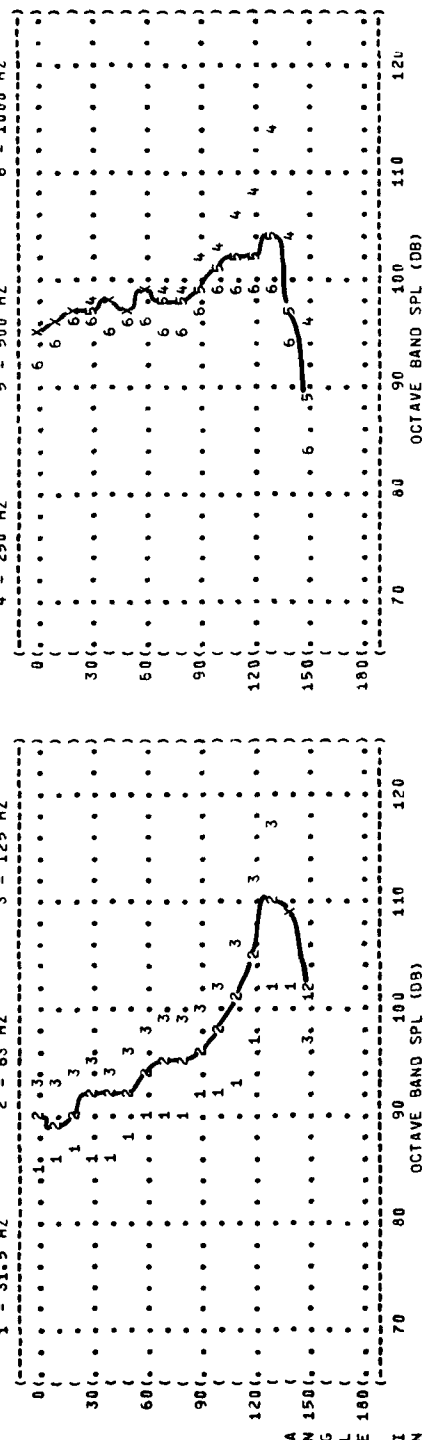
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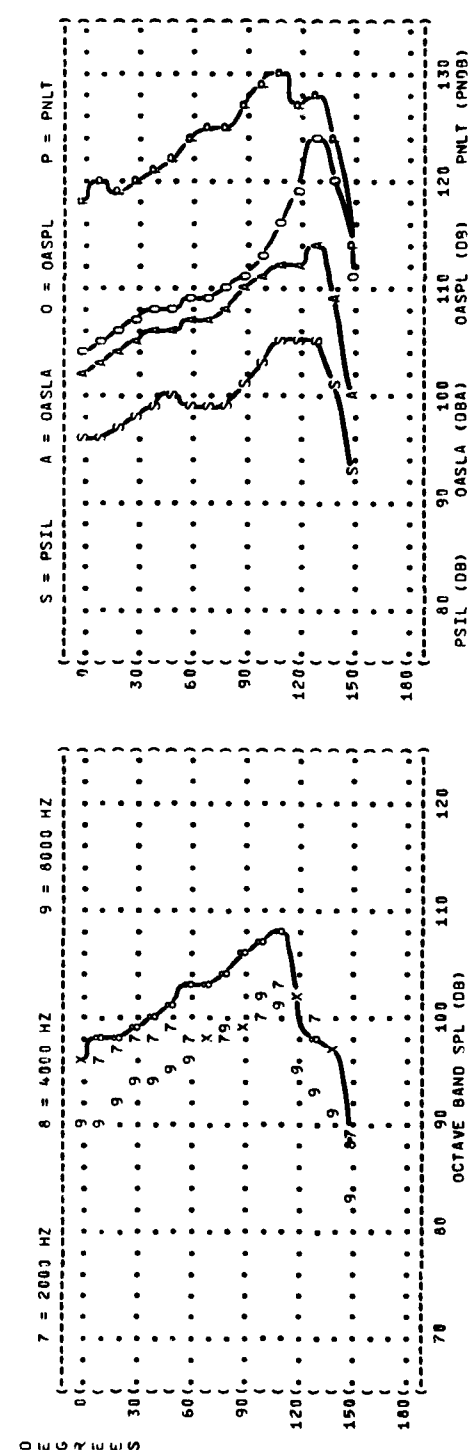
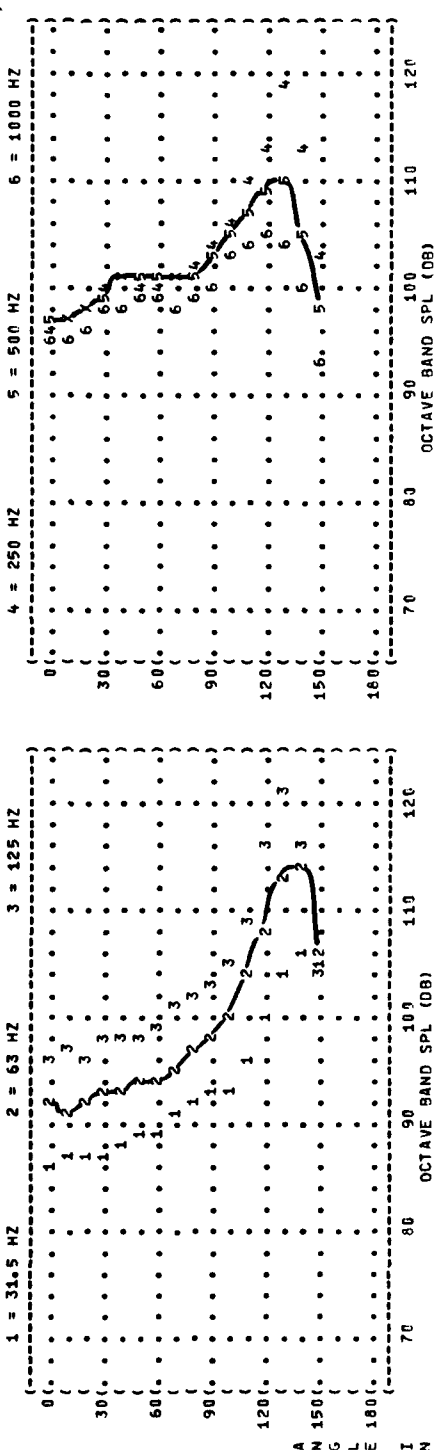
(FIGURE: NORMALIZED FARFIELD NOISE LEVELS
 (3 DISTANCE = 100 METERS
 (NOISE SOURCE/SUBJECT:
 (C-115B AIRCRAFT
 (1F33-P-5
 (FAR FIELD NOISE
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST AN-025-001
 () RUN 03
 () 22 MAR 79
 () PAGE 6
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %



(FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS)
 (3 DISTANCE = 100 METERS)
 (NOISE SOURCE/SUBJECT)
 (C-119B AIRCRAFT)
 (TF33-P-5)
 (FAR FIELD NOISE)
 (OPERATION)
 (97% RPM-ENGINE NO. 2)
 (OTHER ENGINES IDLE)
 (FREE FLOW)
 (METEOROLOGY)
 (TEMP = 15 C)
 (BAR PRESS = 760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION)
 (OMEGA 1.4)
 (TEST AN-025-001)
 (RUN 06)
 (20 NOV 79)
 (PAGE 6)



(FIGURE: NORMALIZED FARFIELD NOISE LEVELS
 (3 DISTANCE = 100 METERS
 (NOISE SOURCE/SUBJECT:
 (C-130B AIRCRAFT
 (TF33-P-5
 (FAR FIELD NOISE
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AN-025-001
 (RUN 35
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (22 MAR 79
 (PAGE 6



(FIGURE: ACOUSTIC POWER LEVEL (PWL))
 (4)
 (NOISE SOURCE/SUBJECT:)
 (C-135B AIRCRAFT)
 (70% RPM, ENGINE NO. 2)
 (OTHER ENGINES IDLE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (TEMP = 17 C)
 (BAR PRESS = .730 M HG)
 (REL HUMID = 80 %)
 (METEOROLOGY:)
 (22 MAR 79)
 (PAGE 3)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST AN-025-001)
 (RUN 02)

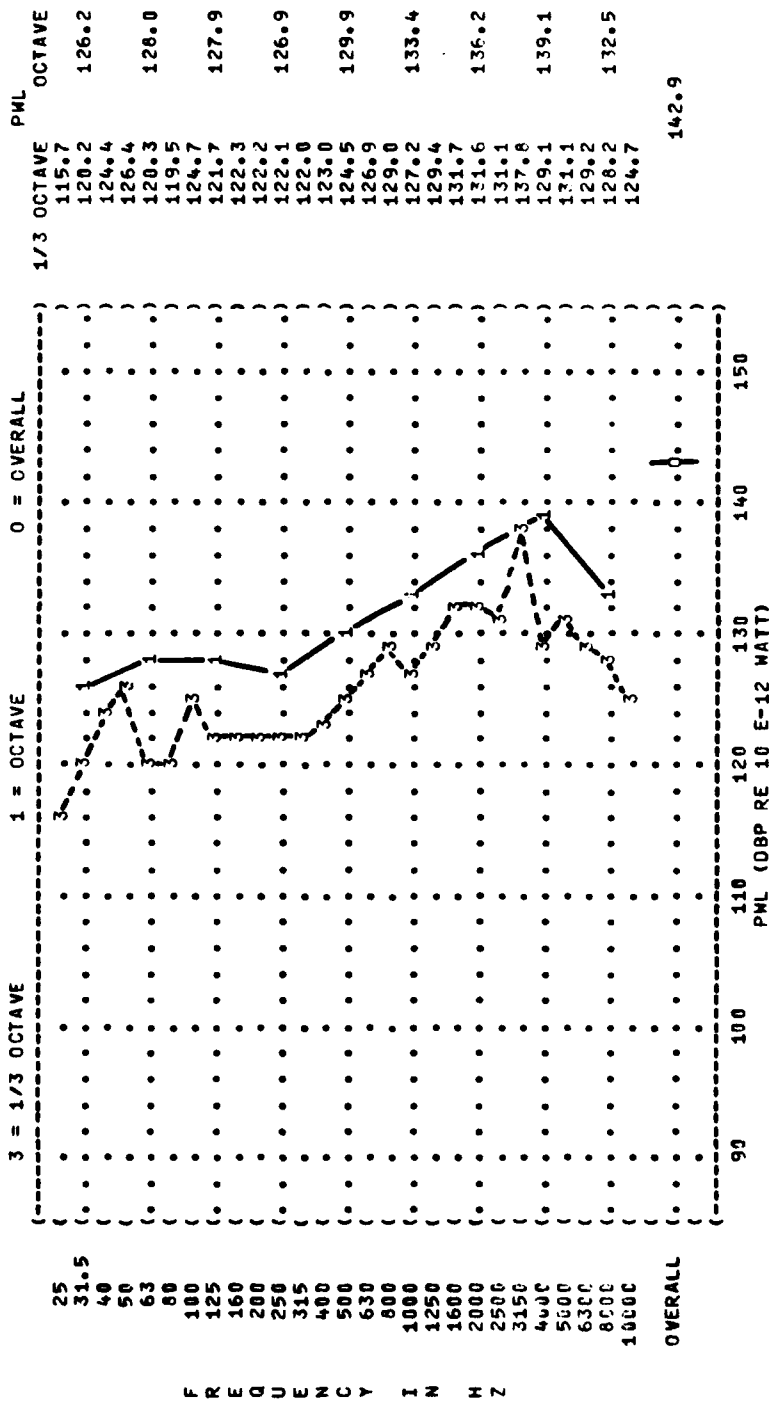


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4

TEST AN-025-001

RUN 03

22 MAR 79

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATION:

METEOROLOGY:

TEMP = 17 C

80% RPM, ENGINE NO. 2

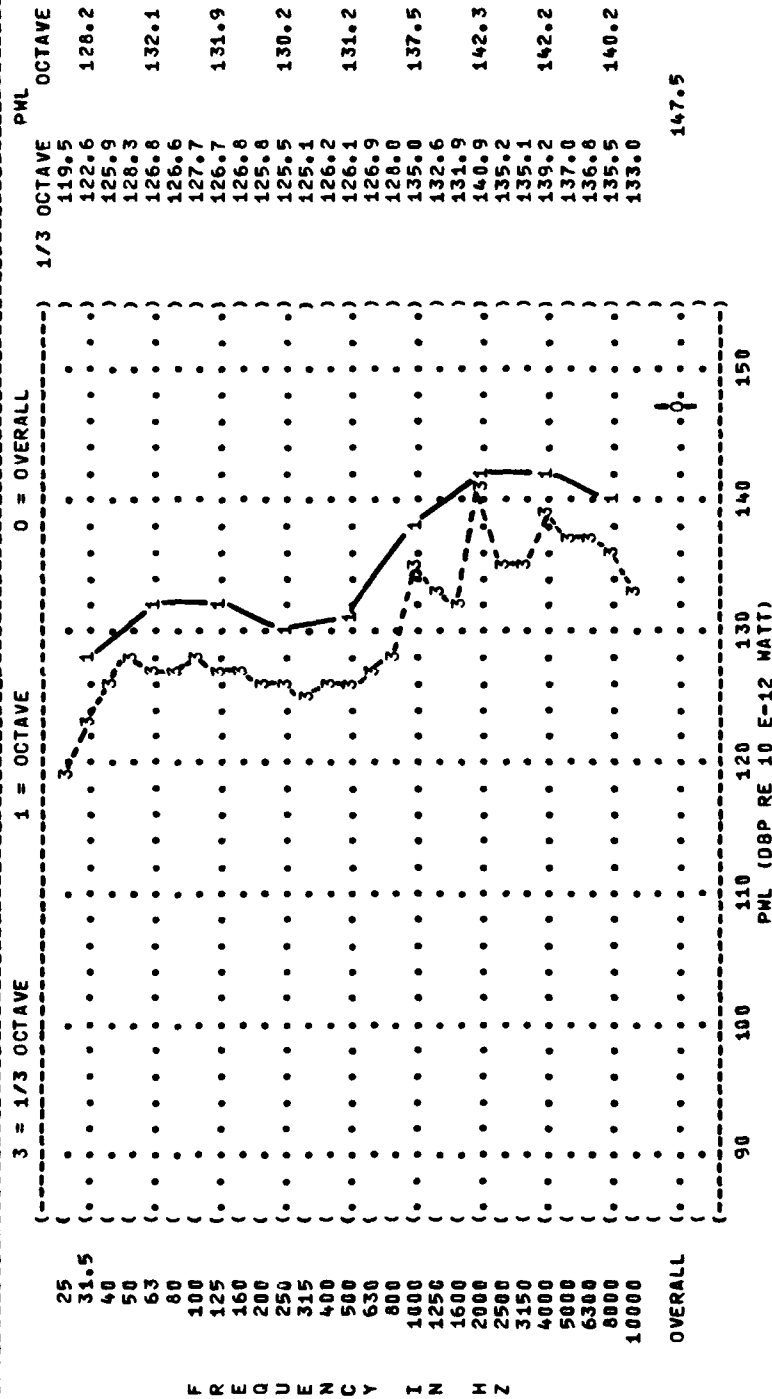
BAR PRESS = .730 M HG

OTHER ENGINES IDLE

REL HUMID = 80 %

FREE FLOW

FREE FIELD NOISE



(FIGURE: ACOUSTIC POWER LEVEL (PWL))
 (4)
 (NOISE SOURCE/SUBJECT:)
 (C-135B AIRCRAFT)
 (TF33-P-5)
 (FAR FIELD NOISE)
 (OPERATION:)
 (90% RPM, ENGINE NO.2)
 (OTHER ENGINES IDLE)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 17 C)
 (BAR PRESS = .730 M HG)
 (REL HUMID = 80 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST AN-025-001)
 (RUN 04)
 (22 MAR 79)
 (PAGE 3)

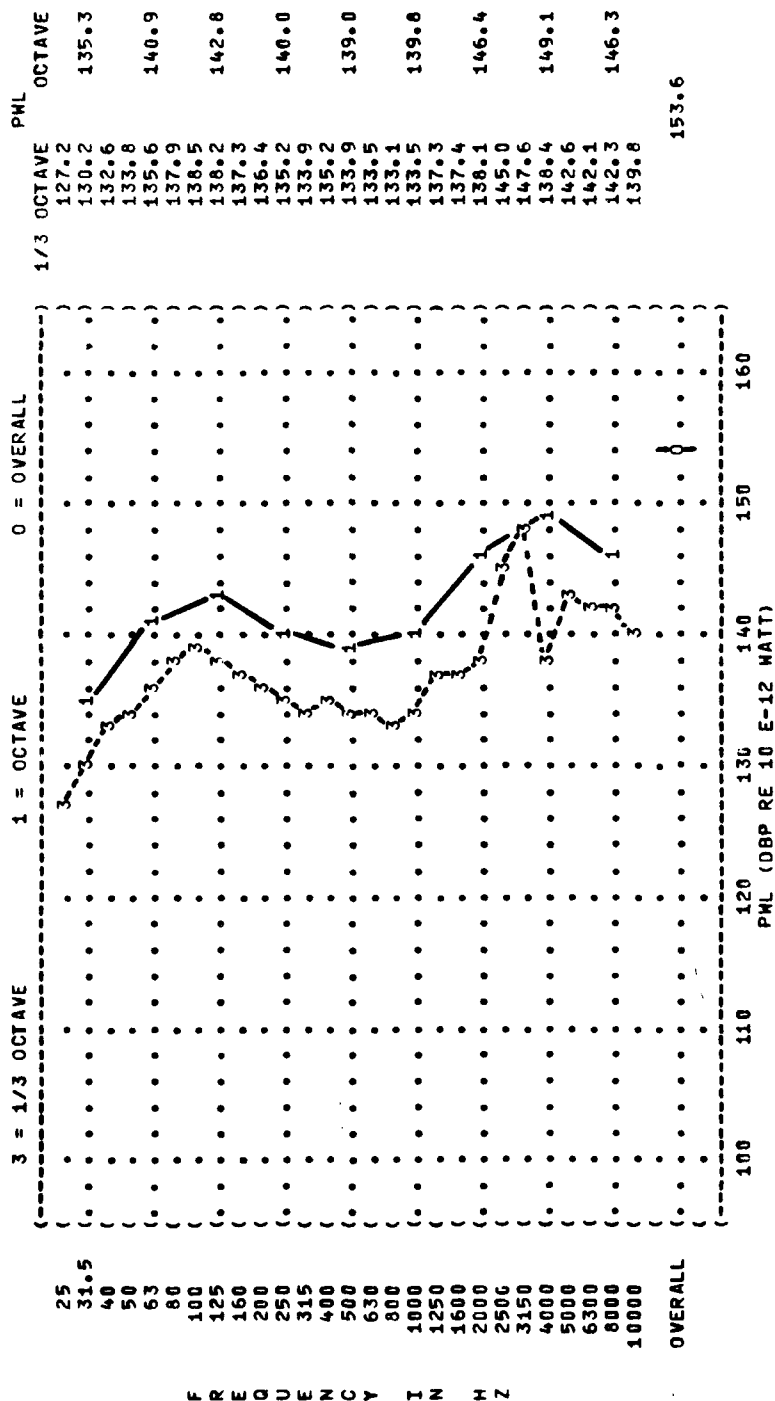


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4

TEST AN-025-001

RUN 06

20 NOV 79

PAGE 3

NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY: TEMP = 22 C

C-135B AIRCRAFT (97% RPM, ENGINE NO.2) BAR PRESS = .739 M HG

TF33-P-5 (OTHER ENGINES IDLE) REL HUMID = 97 %

FAR FIELD NOISE (FREE FLOW)

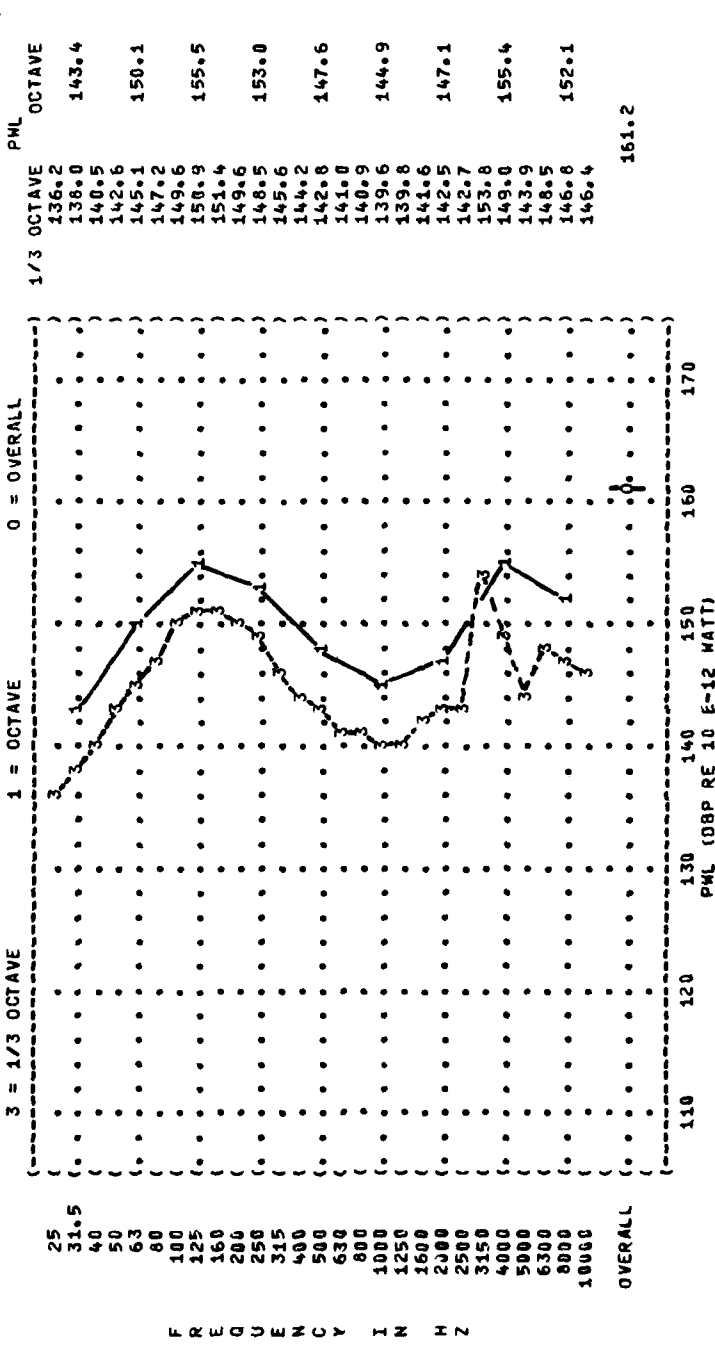


TABLE: DIRECTIVITY INDEX (DB)																
IDENTIFICATION:																
6																
NOISE SOURCE/SUBJECT:																
C-135B AIRCRAFT																
TF33-P-5																
FAR FIELD NOISE																
OPERATION:																
IDLE POWER																
582 RPM																
ALL ENGINES																
FREE FLOW																
TEMP = 17 C																
BAR PRESS = .730 M HG																
REL HUMID = 80 %																
PAGE 4																
TEST AN-025-001																
RUN 01																
OMEGA 1.4																
FREQ (HZ)																
ANGLE (DEGREES)																
1/3 OCTAVE																
25	-2	0	-3	-3	-4	-3	-3	-2	2	1	1	3	1	1	1	-1
31.5	-3	-2	-3	-3	-4	-1	-1	-1	-1	0	0	2	1	2	0	-1
40	-3	-4	-3	-3	-2	-2	-2	-2	-1	0	0	2	1	3	3	2
50	-5	-4	-3	-4	-4	-5	-4	-5	0	1	2	2	1	0	-1	0
63	-1	0	-1	-1	-1	0	0	0	1	1	1	1	1	1	1	1
80	-3	-2	-2	-2	-2	-1	-1	-1	0	0	3	3	0	0	0	-1
100	-5	-4	-5	-4	-2	-2	-2	-2	0	0	4	4	-1	-1	-2	-3
125	1	2	0	-1	-1	-1	-1	-1	-1	0	1	1	1	1	0	-1
160	1	1	-1	-1	-1	0	0	-1	0	1	1	1	3	0	1	0
200	1	1	-1	-1	-1	0	0	-1	-1	1	2	2	1	-1	-1	-8
250	-1	0	-1	-2	0	0	0	-2	-1	-2	2	2	2	-2	-4	-7
315	1	2	2	2	2	1	1	1	-1	-2	2	2	4	3	0	-5
400	2	4	6	5	5	2	2	1	-1	-2	2	0	1	-1	-1	-6
500	7	7	6	5	3	3	3	0	1	-2	-2	-2	-2	-4	-5	-9
630	4	4	4	4	4	3	3	0	0	-3	-3	-3	-2	-4	-5	-10
800	4	4	4	4	4	4	4	1	-2	-4	-2	-1	0	-2	-3	-6
1000	4	5	6	5	2	3	3	-1	0	-4	-2	-1	0	-2	-3	-8
1250	3	3	4	4	4	4	4	2	0	-3	-2	-1	0	-1	-4	-10
1600	4	3	4	4	4	4	4	1	0	-3	-2	0	0	-1	-5	-9
2000	3	3	3	4	4	4	4	2	1	-2	-2	-2	2	-2	-3	-12
2500	2	3	3	4	4	4	4	0	2	-4	-3	0	0	0	-6	-10
3150	5	3	4	4	2	2	2	1	-1	-3	-2	2	1	1	-4	-7
4000	2	2	2	2	1	1	1	0	-1	-3	0	2	1	1	-4	-7
5000	4	3	3	3	1	1	1	0	-1	-3	0	2	2	2	-3	-7
6300	4	3	2	2	3	0	0	0	-1	-3	0	3	2	2	-4	-10
8000	3	2	2	2	3	1	1	0	-1	-3	0	3	2	2	-4	-7
10000	3	2	1	2	0	1	2	-1	-2	-3	-2	3	2	2	-4	-11
OCTAVE																
31.5	-3	-3	-3	-3	-3	-2	-3	-2	0	0	2	2	2	3	2	-2
63	-4	-3	-3	-3	-3	-3	-3	0	0	2	2	2	1	0	-1	-4
125	-2	-1	-2	-2	-2	-1	-2	0	-1	0	3	3	1	0	-1	-8
250	1	1	0	-1	-1	0	0	-1	-1	-1	0	2	3	2	-1	-3
500	5	6	5	5	3	3	3	0	0	-4	-3	-2	-1	-3	-3	-9
1000	3	4	5	4	2	3	3	0	0	-4	-3	-1	0	-2	-3	-6
2000	3	3	3	3	4	1	3	2	1	-4	-2	-1	1	1	-4	-7
4000	4	3	3	3	3	1	3	1	-2	-3	0	2	2	2	-4	-10
6000	4	3	2	2	3	0	3	0	-1	-3	0	3	2	2	-4	-7
8000	3	2	2	2	3	1	2	-1	-2	-3	-2	3	2	2	-4	-10
10000	3	2	1	2	0	1	2	-1	-2	-3	-2	3	2	2	-4	-11
OVERALL																
3	3	3	3	3	1	2	1	0	-2	-2	-1	0	1	0	-2	-8

TABLE: DIRECTIVITY INDEX (DB)																
IDENTIFICATION:																
6																
NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY: TEST AN-025-001																
C-135B AIRCRAFT (70% RPM, ENGINE NO. 2) TEMP = 17 C																
TF33-P-5 (OTHER ENGINES IDLE) BAR PRESS = .730 M HG																
FAR FIELD NOISE (FREE FLOW) REL HUMID = 80 %																
PAGE 4																
FREQ (HZ) ANGLE (DEGREES)																
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
1/3 OCTAVE																
25	-1	-1	-3	-2	-1	-1	-2	0	0	1	2	1	1	1	2	1
31.5	-2	-2	-4	-3	-2	-2	-2	-1	0	1	1	0	1	1	0	0
40	-5	-4	-4	-2	-3	-2	-4	0	1	1	1	1	1	2	2	1
50	-2	-1	-2	-2	-1	0	0	0	1	1	1	1	1	1	0	0
63	-3	-1	-1	-1	-1	0	0	1	-1	0	1	1	1	1	-1	-1
80	-3	-2	-1	-2	-1	0	0	-1	1	0	1	2	1	0	1	-2
100	-5	-3	-5	-4	-2	-2	1	-2	2	-2	4	2	0	0	-1	-4
125	1	1	-1	-1	0	0	1	-1	-1	0	0	1	1	2	2	-3
160	1	1	0	-1	-1	0	1	-1	-1	-1	0	1	1	1	2	-2
200	0	0	-1	-2	0	0	1	0	-1	0	0	1	2	1	0	-3
250	-2	-1	-1	-1	0	0	0	-2	-2	-2	-2	0	3	5	-1	-6
315	1	0	0	0	0	0	0	0	-1	-1	-1	1	1	4	1	-6
400	1	2	2	2	2	1	2	1	-1	-1	-1	0	-1	1	0	-6
500	4	5	6	4	3	0	1	0	-2	-1	-3	-1	-2	-1	-2	-8
630	4	6	7	5	5	0	1	-1	-4	-3	-4	-3	-4	-4	-5	-9
800	2	4	5	5	6	0	1	-1	-5	-4	-6	-4	-5	-5	-6	-11
1000	4	5	5	6	4	1	0	-2	-4	-3	-3	-2	-1	-2	-3	-7
1250	5	6	4	4	2	2	1	-1	-2	-1	-1	-1	0	-1	-3	-8
1600	2	2	5	2	4	5	3	0	-3	-3	-4	-3	-3	-4	-9	-13
2000	3	4	4	4	3	3	1	-1	-3	-4	-2	-1	0	-1	-5	-12
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3150	-2	-1	0	2	1	5	0	-3	-2	-2	-1	1	3	-2	-8	-11
4000	1	2	2	2	1	2	0	-1	-2	-2	0	2	3	-1	-6	-11
5000	2	2	2	2	1	2	0	-1	-2	-1	1	2	2	-1	-5	-10
6300	0	1	1	2	1	2	0	-1	-2	-2	1	1	4	-1	-7	-11
8000	1	2	0	2	1	1	1	0	-1	0	1	2	2	-1	-6	-11
10000	1	1	1	2	1	1	0	-1	-2	0	1	2	2	-1	-5	-11
OCTAVE																
31.5	-4	-3	-4	-2	-2	-2	-3	0	0	1	1	1	1	2	2	1
63	-2	-2	-2	-1	0	0	0	0	0	0	1	1	1	1	0	-1
125	-1	-1	-2	-1	-1	-1	-1	-1	-1	-1	3	2	0	1	1	-3
250	0	0	0	-1	0	0	0	-1	-1	-1	-1	1	2	4	0	-5
500	4	5	6	4	4	0	1	0	-2	-2	-3	-2	-2	-3	-3	-8
1000	4	5	5	6	4	1	1	-1	-3	-3	-3	-2	-2	-3	-7	-11
2000	3	4	4	4	3	4	2	0	-2	-2	0	1	3	-2	-7	-12
4000	-1	0	0	2	1	5	0	-2	-2	-1	1	2	2	-1	-6	-11
8000	1	1	1	2	1	1	0	-1	-2	-1	0	1	2	-1	-5	-11
OVERALL	1	2	3	3	2	3	1	-1	-2	-2	-1	0	1	-1	-4	-8

TABLE: DIRECTIVITY INDEX (DB)																			
IDENTIFICATION:																			
6																			
NOISE SOURCE/SUBJECT:																			
C-135B AIRCRAFT																			
TF33-P-5																			
FAR FIELD NOISE																			
OPERATION:																			
80% RPM, ENGINE NO. 2																			
OTHER ENGINES IDLE																			
FREE FLOW																			
METEOROLOGY:																			
TEMP = 17 C																			
BAR PRESS = .730 M HG																			
REL HUMID = 80 %																			
PAGE 4																			
ANGLE (DEGREES)																			
FREQ	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
(HZ)																			
1/3 OCTAVE																			
25	-2	-2	0	0	-3	-1	-2	0	-1	-2	0	1	3	2	2	3			
31.5	-3	-3	-3	-3	-2	-1	-2	-2	-1	0	1	1	2	3	3	1	1		
40	-4	-4	-2	-2	-2	-1	-2	0	0	0	1	2	1	2	3	2	2		
50	-4	-2	-2	-2	-2	-2	-1	-1	-1	0	1	2	1	1	2	2	0		
63	-6	-5	-6	-4	-2	-3	-1	0	-2	0	1	2	1	3	2	2	-1		
80	-7	-7	-5	-4	-2	-2	-2	-1	-2	-1	0	2	3	4	2	2	-2		
100	-6	-5	-5	-3	-2	-2	-1	0	-1	-1	2	2	0	3	2	2	-2		
125	-2	-2	-2	-2	-1	0	0	0	-1	0	-1	1	1	4	2	2	-4		
160	-1	-1	-1	-1	-1	-1	0	-1	-1	0	0	1	1	3	2	2	-5		
200	-1	0	-1	-1	-1	-1	0	0	-1	0	0	1	2	2	1	2	-5		
250	-2	-1	0	0	0	0	0	0	-2	-1	-1	1	4	3	-1	-6			
315	0	0	-1	0	0	0	0	0	-1	-1	0	0	1	4	1	-6			
400	0	1	1	1	1	1	1	2	0	-1	0	0	1	1	0	-5			
500	4	3	4	3	2	1	2	0	0	-2	0	-1	-1	-1	-2	-8			
630	5	5	5	5	4	4	4	3	-2	-2	-1	-3	-1	-2	-3	-8			
800	2	2	3	3	4	4	4	3	-2	-2	0	-2	-2	-3	-3	-9			
1000	2	5	6	7	7	7	7	7	-3	-4	-5	-7	-6	-7	-7	-13			
1250	3	2	3	4	5	5	5	4	-2	-4	-2	-4	-3	-4	-5	-11			
1600	2	2	3	3	4	4	4	3	-3	-3	-2	-2	0	-4	-7	-13			
2000	-1	-2	0	-1	1	3	4	3	-4	-4	-1	-1	3	-5	-10	-14			
2500	2	1	2	3	3	4	4	3	-4	-4	-2	-1	1	-5	-10	-14			
3150	3	1	2	0	1	1	2	2	-2	-2	-1	-1	1	-7	-11	-16			
4000	-1	-2	0	1	1	2	3	1	-1	-1	1	0	3	-5	-8	-13			
5000	0	0	1	1	2	2	2	1	-1	0	1	0	3	-6	-9	-14			
6300	0	1	1	1	2	2	2	1	-1	0	1	0	3	-5	-9	-13			
8000	0	0	1	1	2	2	2	1	-1	0	1	0	3	-5	-9	-13			
10000	0	-1	0	1	2	2	1	1	-1	0	2	0	4	-5	-8	-13			
OCTAVE																			
31.5	-4	-3	-3	-2	-2	-1	-2	-1	0	0	1	1	2	2	2	2	2		
63	-5	-4	-3	-2	-2	-1	-1	-1	-2	0	1	2	2	3	2	2	-1		
125	-3	-2	-2	-2	-1	0	0	0	-1	-1	1	1	1	3	2	-3			
250	-1	0	0	0	0	0	0	-1	-1	-1	0	1	3	3	0	-6			
500	3	3	4	3	3	3	1	-1	-1	-1	-1	-1	0	0	-2	-7			
1000	2	4	5	6	6	2	3	-2	-3	-5	-3	-5	-4	-5	-6	-12			
2000	0	-1	1	0	2	3	4	2	-4	-4	-1	-1	3	-5	-9	-14			
4000	1	-1	1	1	2	2	1	-1	0	-1	2	0	3	-6	-9	-14			
8000	0	0	1	1	2	2	1	0	-1	0	1	0	3	-5	-9	-14			
OVERALL																			
	1	0	2	2	3	2	2	0	-2	-2	0	-1	2	-3	-5	-9			

TABLE: DIRECTIVITY INDEX (DB)																IDENTIFICATION:			
6																OMEGA 1.4			
																TEST AN-025-001			
NOISE SOURCE/SUBJECT:																RUN 04			
(OPERATION:																METEOROLOGY:			
(C-135B AIRCRAFT																TEMP = 17 C			
(TF33-P-5																BAR PRESS = .730 M HG			
(FAR FIELD NOISE																REL HUMID = 80 %			
(FREE FLOW																PAGE 4			
FREQ	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
(HZ)																			
1/3 OCTAVE																			
25	-6	-5	-4	-6	-4	-4	-2	-2	-2	-1	-1	0	1	4	4	5			
31.5	-6	-7	-7	-5	-6	-4	-4	-5	-4	-1	-2	-1	-1	5	6	5			
40	-7	-6	-8	-7	-5	-6	-6	-5	-3	-2	-1	0	3	4	4	6	5		
50	-7	-6	-7	-6	-5	-3	-3	-3	-5	-2	-1	0	3	4	6	4			
63	-9	-8	-8	-6	-5	-6	-6	-5	-5	-2	0	1	3	6	5	2			
80	-11	-11	-8	-8	-7	-6	-6	-6	-6	-3	-2	0	4	6	7	-2			
100	-10	-9	-8	-7	-8	-8	-6	-6	-5	-4	-1	1	3	7	5	-3			
125	-8	-7	-7	-5	-6	-6	-6	-6	-5	-3	-1	1	2	7	5	-5			
160	-6	-5	-4	-4	-3	-4	-4	-4	-3	-1	0	1	3	6	3	-7			
200	-5	-4	-3	-2	-3	-3	-3	-3	-2	-1	1	2	4	5	2	-7			
250	-5	-2	-2	-3	-2	-2	-1	-3	-2	-2	0	2	5	4	1	-7			
315	-4	-3	-2	-1	0	-1	-1	-1	-2	-1	0	1	3	3	1	-8			
400	-2	-1	0	0	2	1	1	1	-1	-1	1	0	2	1	-1	-8			
500	-2	-1	0	0	1	2	1	1	-1	-1	1	0	1	1	-1	-9			
630	1	1	2	2	2	1	1	1	-1	-1	1	0	1	0	-2	-9			
800	0	1	2	2	2	1	1	0	-1	0	1	0	1	-1	-2	-9			
1000	1	3	4	3	3	1	2	0	-1	-1	0	0	0	-2	-4	-10			
1250	1	2	2	3	4	3	1	0	-1	-1	0	0	-2	-5	-6	-12			
1600	2	2	3	4	4	3	2	1	-2	-1	-1	-1	-2	-6	-8	-14			
2000	1	2	2	3	3	3	2	1	-2	-1	0	0	-1	-6	-8	-14			
2500	-2	-1	1	1	1	2	1	0	-1	0	4	2	-2	-9	-11	-17			
3150	0	1	1	2	2	4	2	1	-1	-2	1	2	-3	-9	-11	-16			
4000	0	1	2	1	3	2	2	0	-1	-1	2	2	-2	-7	-9	-15			
5000	-1	-1	0	0	1	1	2	1	0	1	2	2	-2	-9	-11	-17			
6300	-1	0	1	1	1	2	2	1	0	1	1	3	-2	-8	-10	-16			
8000	-2	-1	-1	0	0	1	0	1	0	2	2	3	-2	-9	-11	-16			
10000	-2	-1	0	0	1	1	1	1	0	2	2	3	-1	-7	-9	-15			
OCTAVE																			
31.5	-7	-6	-7	-6	-6	-4	-5	-4	-3	-1	-1	0	2	5	5	5			
63	-9	-9	-8	-7	-6	-6	-5	-5	-5	-3	-1	0	3	6	6	1			
125	-8	-7	-6	-5	-5	-6	-5	-5	-4	-2	0	1	3	7	4	-4			
250	-5	-3	-2	-2	-2	-2	-2	-2	-2	-2	0	2	4	4	1	-7			
500	-1	-1	0	1	2	1	1	0	-1	-1	1	0	1	1	-1	-8			
1000	1	2	2	2	3	2	1	0	-1	-1	0	0	-1	-3	-4	-10			
2000	0	0	1	2	2	2	1	0	-1	0	3	2	-2	-8	-10	-16			
4000	0	1	1	1	2	3	2	1	-1	-1	1	2	-3	-9	-11	-16			
8000	-1	-1	0	0	1	1	1	1	0	2	2	3	-2	-8	-10	-16			
OVERALL	-1	-1	0	0	1	2	1	0	-1	-1	1	2	0	1	-1	-7			

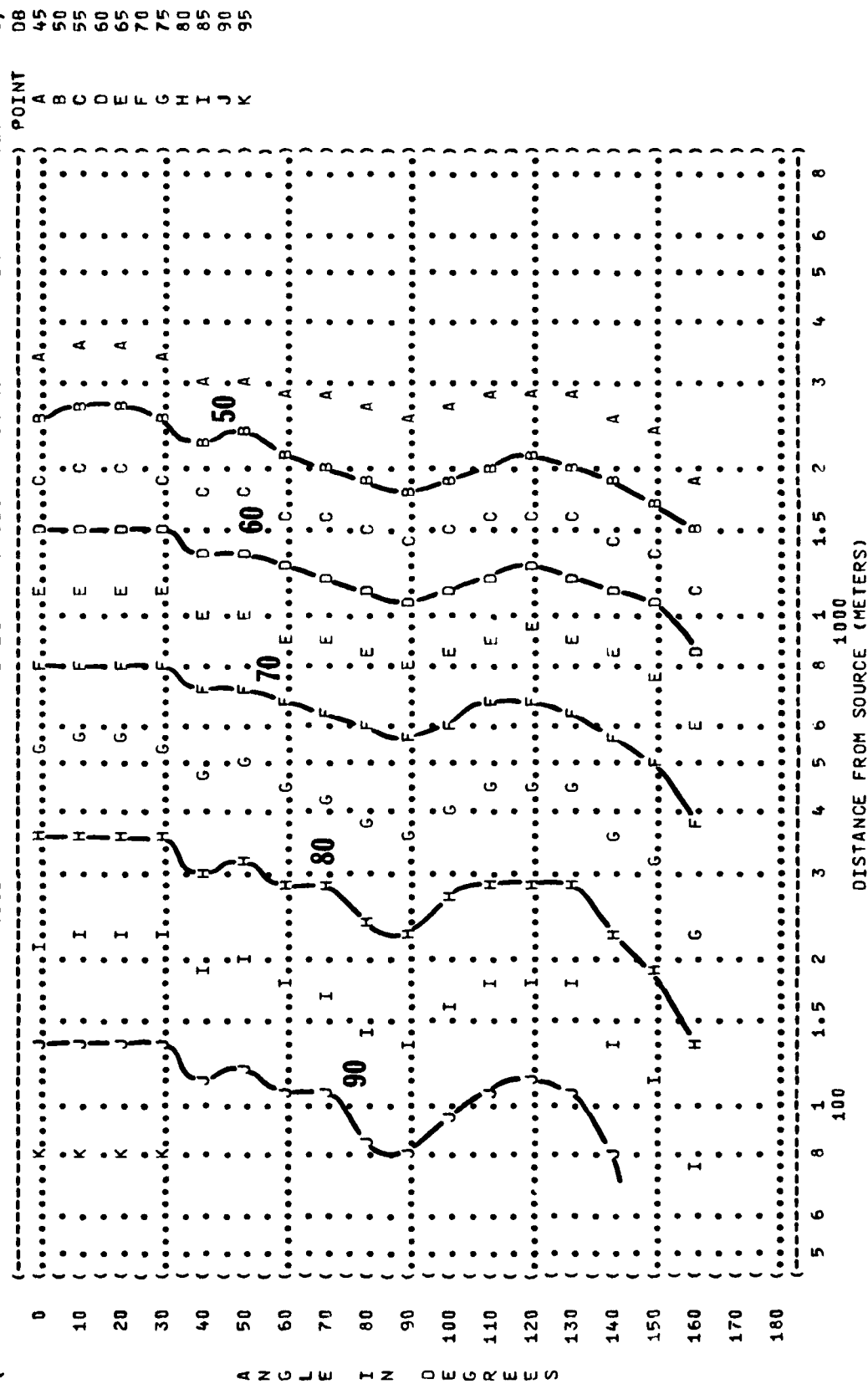
TABLE: DIRECTIVITY INDEX (DB)																
IDENTIFICATION:																
6																
NOISE SOURCE/SUBJECT:																
C-135B AIRCRAFT																
TF33-P-5																
FAR FIELD NOISE																
OPERATION:																
97% RPM, ENGINE NO. 2																
OTHER ENGINES IDLE																
FREE FLOW																
METEOROLOGY:																
TEMP = 22 C																
BAR PRESS = .739 M HG																
REL HUMID = 97 %																
PAGE 4																
FREQ	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
(HZ)																
1/3 OCTAVE																
25	-10	-8	-9	-8	-8	-8	-3	-3	-3	-2	-4	-2	1	5	5	7
31.5	-10	-9	-9	-9	-8	-7	-5	-6	-5	-4	-4	-3	2	7	6	4
40	-11	-11	-9	-10	-9	-9	-7	-7	-7	-4	-3	-3	2	6	6	5
50	-12	-11	-9	-9	-9	-9	-5	-6	-7	-5	-4	-2	2	6	8	3
63	-12	-13	-13	-10	-9	-10	-8	-8	-8	-6	-4	-3	3	8	6	-1
80	-13	-15	-13	-12	-12	-12	-10	-8	-8	-7	-4	-1	3	8	6	-3
100	-16	-16	-13	-14	-14	-13	-8	-7	-8	-7	-5	-1	4	9	4	-10
125	-15	-15	-14	-12	-13	-13	-10	-8	-9	-8	-6	-2	5	9	2	-11
160	-14	-14	-14	-12	-13	-11	-11	-10	-8	-7	-5	-3	4	10	0	-11
200	-12	-11	-9	-7	-7	-10	-8	-7	-7	-5	-3	-1	3	9	0	-9
250	-9	-9	-8	-7	-5	-5	-4	-6	-5	-4	-2	1	3	9	-1	-9
315	-9	-7	-7	-5	-5	-5	-4	-3	-4	-1	0	2	4	7	-2	-9
400	-6	-5	-4	-3	-2	-2	-2	-2	-2	-1	1	3	3	5	-2	-11
500	-4	-4	-3	-2	-2	-2	0	-1	0	0	1	2	2	4	-3	-11
630	-5	-3	-2	-1	-1	-2	0	-2	-1	0	2	2	2	3	-3	-12
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10000	-8	-8	-5	-5	-4	-2	0	2	0	3	4	2	-1	-4	-9	-17
OCTAVE																
31.5	-11	-9	-9	-9	-9	-8	-5	-5	-5	-4	-4	-3	2	6	6	5
63	-12	-14	-13	-11	-10	-10	-9	-8	-7	-6	-4	-2	3	8	7	-1
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2000	-3	-2	-1	0	0	1	1	1	0	0	2	2	0	-2	-8	-16
4000	-6	-6	-5	-3	-3	-1	0	1	0	4	4	2	-2	-6	-12	-20
8000	-7	-7	-5	-4	-4	-2	0	3	1	3	4	2	-2	-4	-10	-18
OVERALL	-9	-8	-7	-6	-5	-4	-3	-2	-3	0	0	1	3	7	1	-7

TABLE: DIRECTIVITY INDEX (DB)										IDENTIFICATION:									
6										OMEGA 1.4									
NOISE SOURCE/SUBJECT:										TEST AN-025-001									
(OPERATION:										RUN 05									
(MAXIMUM POWER ENGINE NO.2										TEMP = 17 C									
(OTHER ENGINES IDLE										BAR PRESS = .730 M HG									
(FREE FLOW										REL HUMID = 80 %									
FREQ										PAGE 4									
(HZ)										ANGLE (DEGREES)									
1/3 OCTAVE																			
25	-14	-11	-10	-10	-10	-10	-10	-10	-10	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
31.5	-13	-12	-10	-11	-11	-11	-11	-11	-11	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7
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50	-13	-12	-13	-11	-10	-9	-8	-6	-5	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
63	-14	-13	-14	-13	-13	-13	-11	-11	-11	-10	-10	-8	-8	-8	-8	-8	-8	-8	-8
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800	-6	-6	-5	-4	-3	-3	-3	-3	-3	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
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OVERALL	-11	-11	-10	-9	-8	-7	-7	-7	-7	-6	-5	-4	-2	0	3	8	4	-5	-5

OVERALL SOUND PRESSURE LEVEL {OASPL}
EQUAL LEVEL CONTOURS (DB)

5

```
( ( FIGURE: OVERALL SOUND PRESSURE LEVEL {OASPL} ) IDENTIFICATION: )
( ( EQUAL LEVEL CONTOURS (DB) ) ) )
( ( 5 ----- ) OMEGA 1.4 )
( ( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) TEST AN-025-001 )
( ( OPERATION: ) TEMP = 15 C ) RUN #1 )
( ( IDLE POWER ) BAR PRESS = .760 M HG ) 22 MAR 79 )
( ( 58% RPM ) REL HUMID = 70 % ) )
( ( ALL ENGINES ) ) )
( ( FAR FIELD NOISE ) FREE FLOW ) PAGE 13 )
```



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(-----)
( FIGURE: OVERALL SOUND PRESSURE LEVEL {OASPL} ) IDENTIFICATION: )
(      5 EQUAL LEVEL CONTOURS (DB) ) )
(-----)
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: )
( C-135B AIRCRAFT ) ( 70% RPM, ENGINE NO. 2 ) TEMP = 15 C )
( TF33-P-5 ) ( OTHER ENGINES IDLE ) BAR PRESS = .760 M HG )
( FAR FIELD NOISE ) ( FREE FLOW ) REL HUMID = 70 % )
(-----)
( PAGE 13 )
```

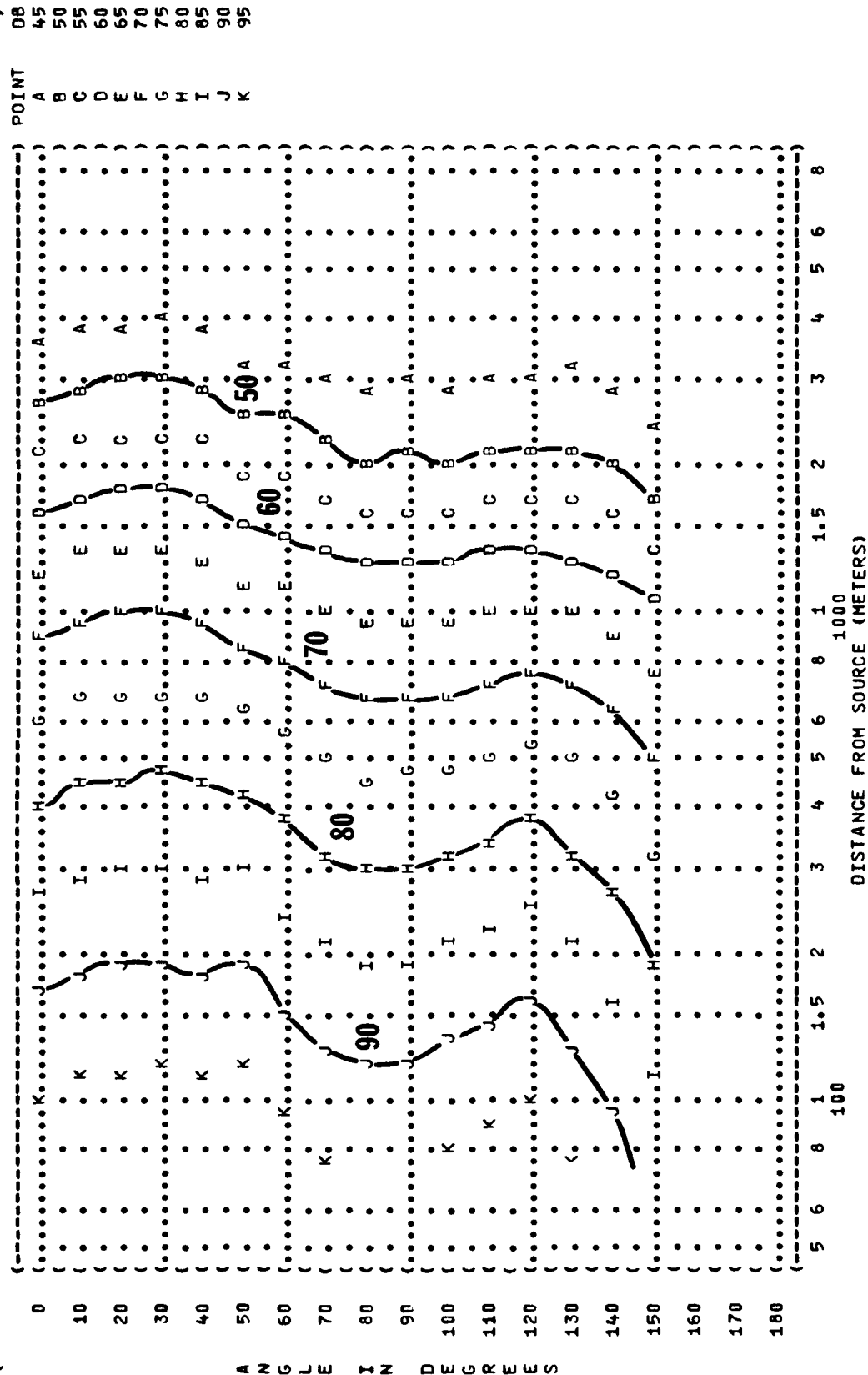
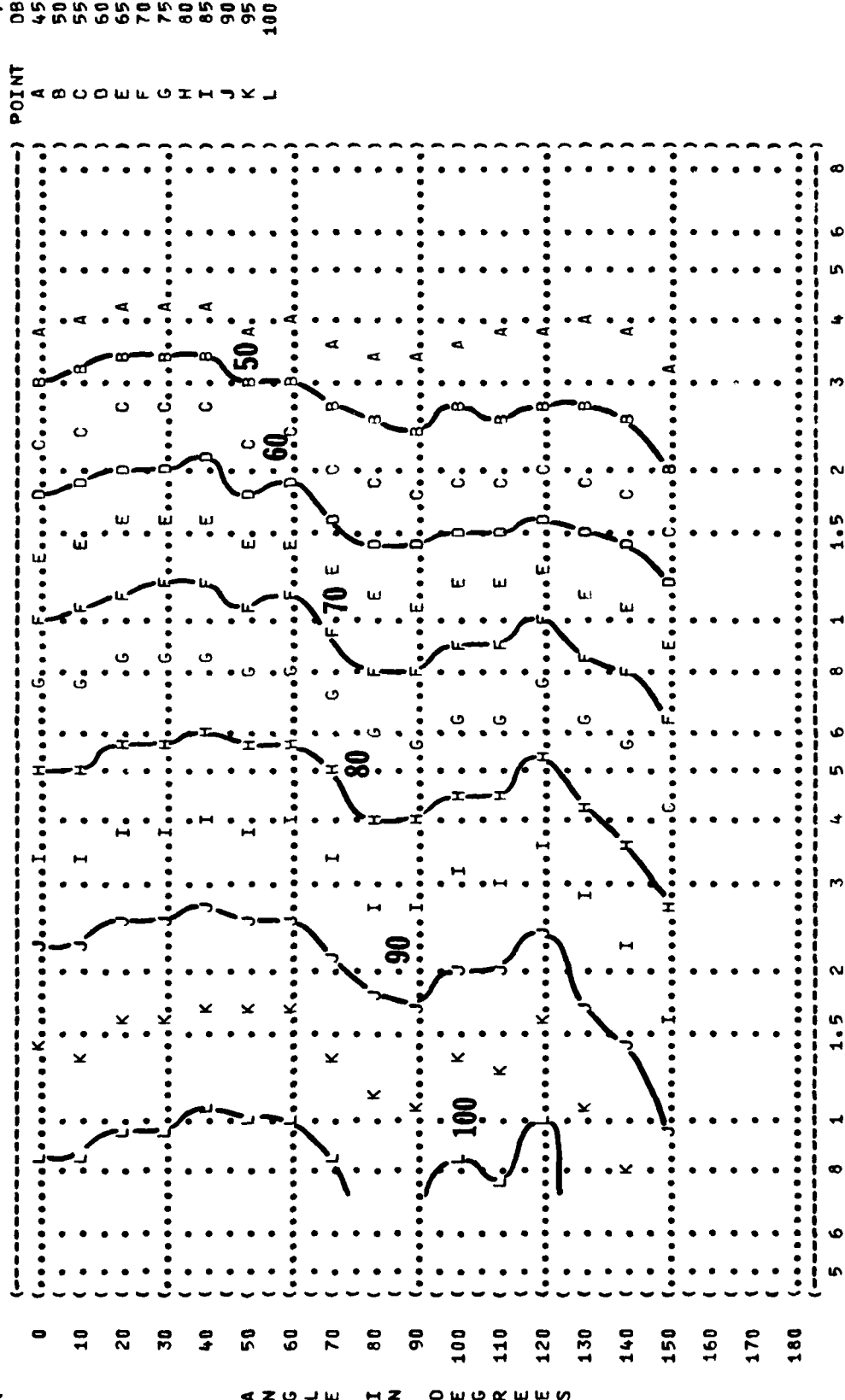


FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL)
EQUAL LEVEL CONTOURS (DB)

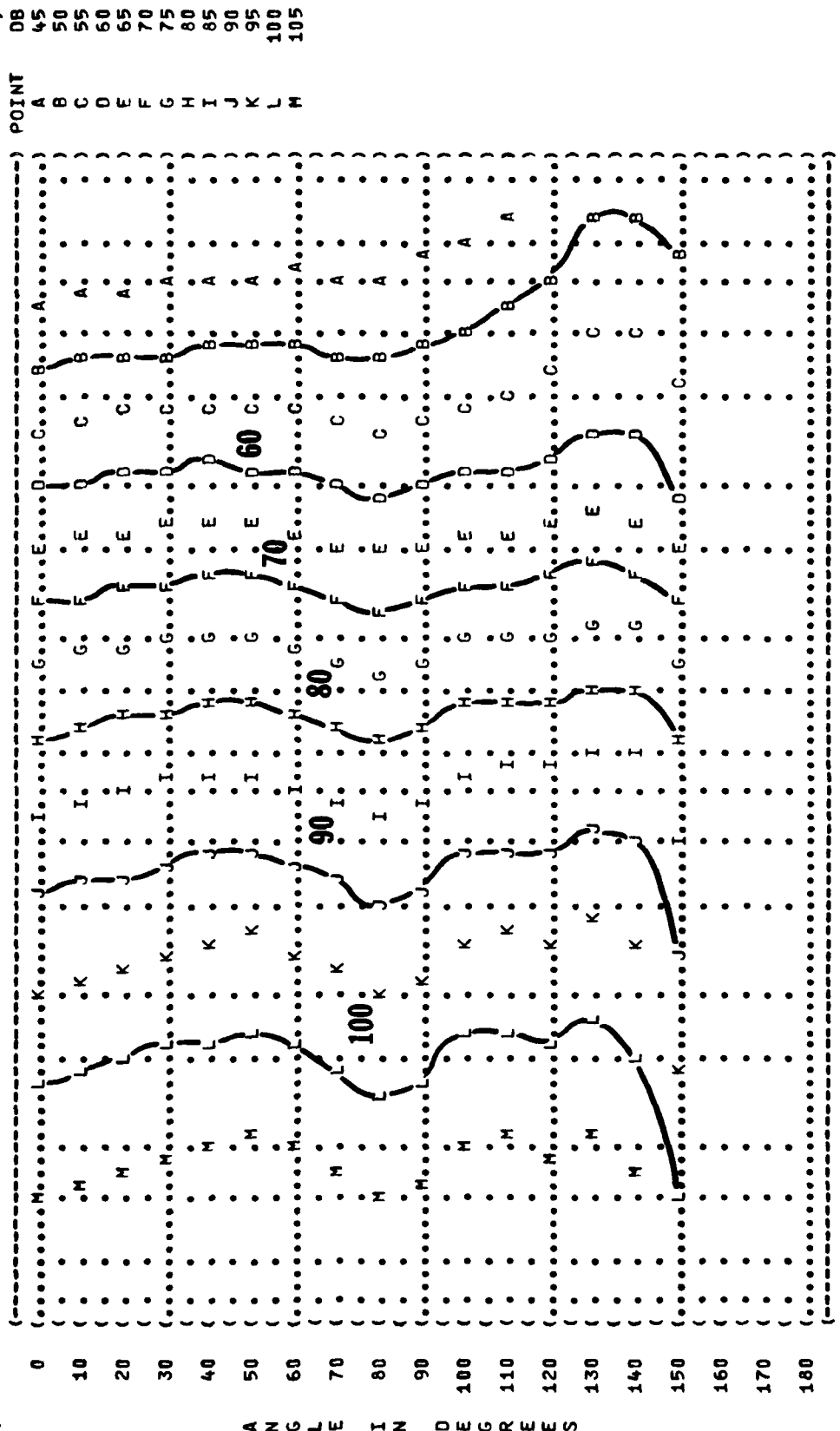
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IDENTIFICATION:)
OMEGA 1.4)
TEST AN-025-001)
RUN 03)
METEOROLOGY:)
TEMP = 15 C)
BAR PRESS = .760 M HG)
REL HUMID = 70 %)
OPERATION:)
80% RPM, ENGINE NO. 2)
OTHER ENGINES IDLE)
FREE FLOW)
NOISE SOURCE/SUBJECT:)
C-135B AIRCRAFT)
TF33-P-5)
FAR FIELD NOISE)
PAGE 13)



A N G L E I N D E G R E E S

(FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL))
 (5)
 () IDENTIFICATION:)
 () OMEGA 1.4)
 () TEST AN-025-001)
 () RUN 04)
 () METEOROLOGY:)
 () TEMP = 15 C)
 () BAR PRESS = .760 M HG)
 () REL HUMID = 70 %)
 () 22 MAR 79)
 () PAGE 13)
 ()
 (NOISE SOURCE/SUBJECT:)
 () OPERATION:)
 () C-135B AIRCRAFT)
 () 90% RPM, ENGINE NO.2)
 () TF33-P-5)
 () OTHER ENGINES IDLE)
 () FAR FIELD NOISE)
 () FREE FLOW)



A N G L E I N D E G R E E S

DISTANCE FROM SOURCE (METERS)

**FIGURE: OVERALL SOUND PRESSURE LEVEL {OASPL}
5 EQUAL LEVEL CONTOURS (DB)**

IDENTIFICATION:

OMEGA 1.4
TEST AN-025-00

RUN 06

20 NOV 79

PAGE 13

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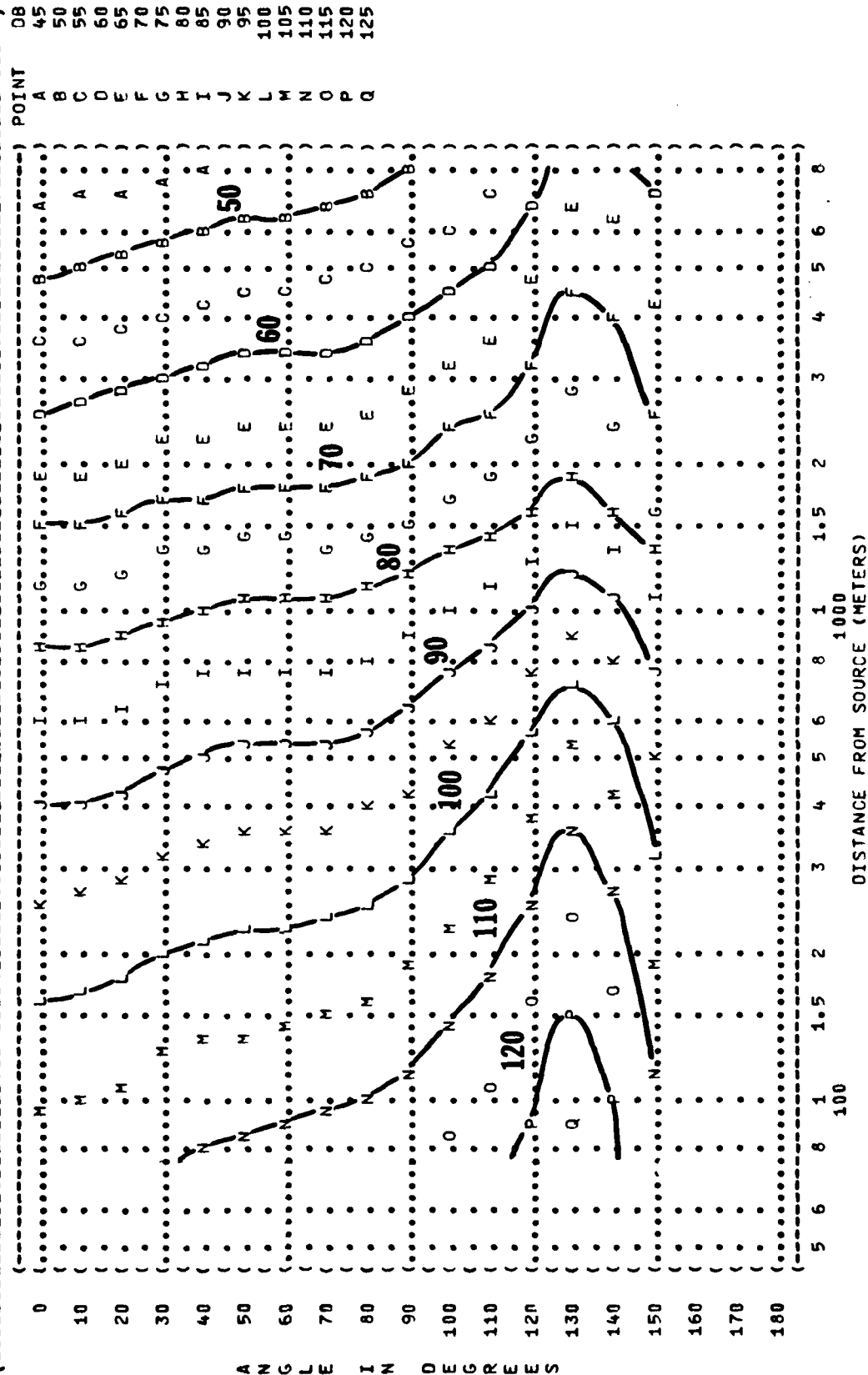
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DISTANCE FROM SOURCE (METERS)

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( ( FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL)
( ( 5
( ( EQUAL LEVEL CONTOURS (DB)
( (
( ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY:
( ( ( ( TEMP = 15 C
( ( C-1358 AIRCRAFT ( MAXIMUM POWER ENGINE NO.2 ) BAR PRESS = .760 M HG
( ( TF33-P-5 ( OTHER ENGINES IDLE ) REL HUMID = 70 %
( ( FAR FIELD NOISE ( FREE FLOW )
( (
( ( IDENTIFICATION:
( ( )
( ( ) OMEGA 1.4
( ( ) TEST AN-025-001
( ( ) RUN 05
( ( )
( ( ) 22 MAR 79
( ( )
( ( ) PAGE 13
( ( )

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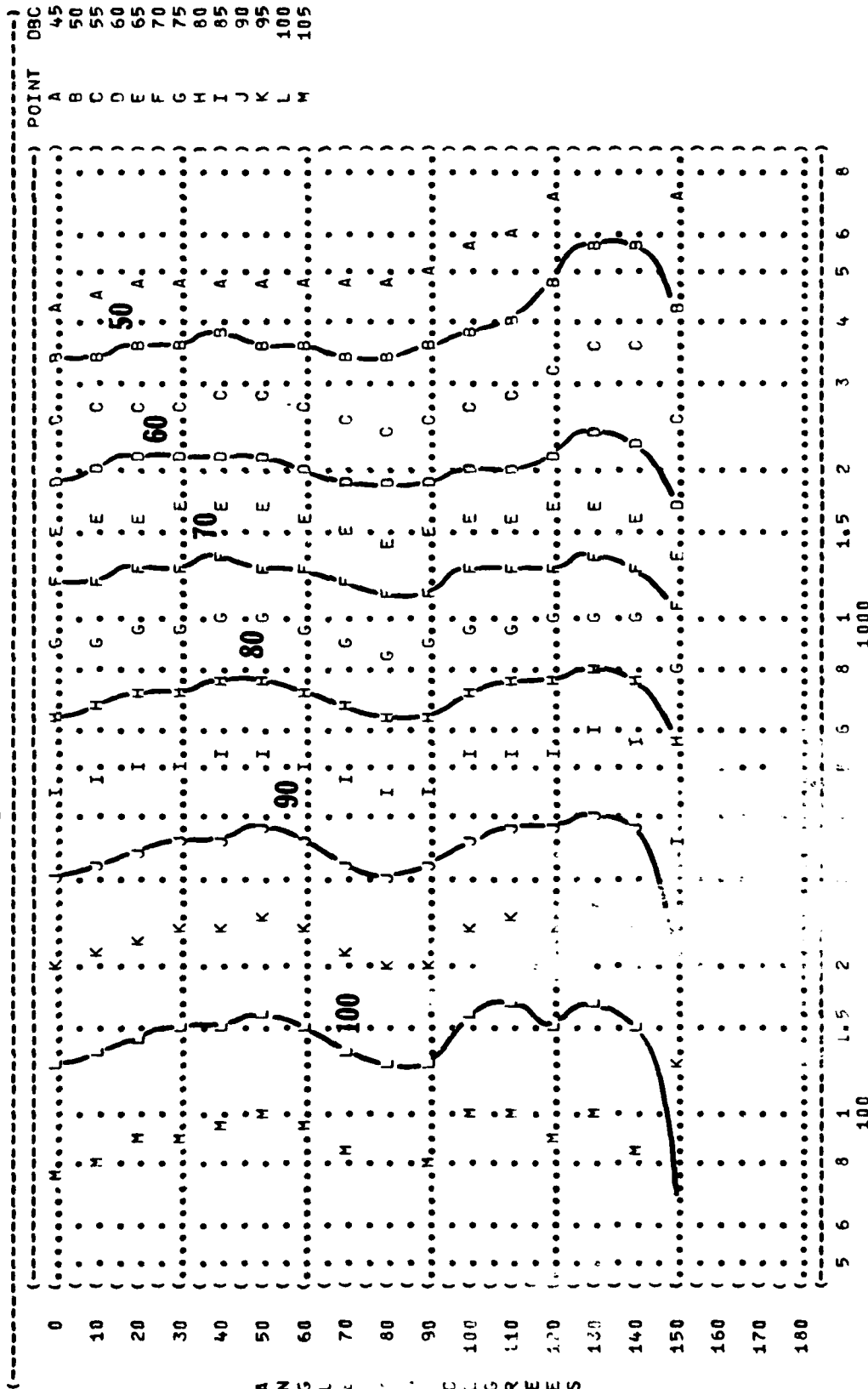


ANGLER IN DEERWATER


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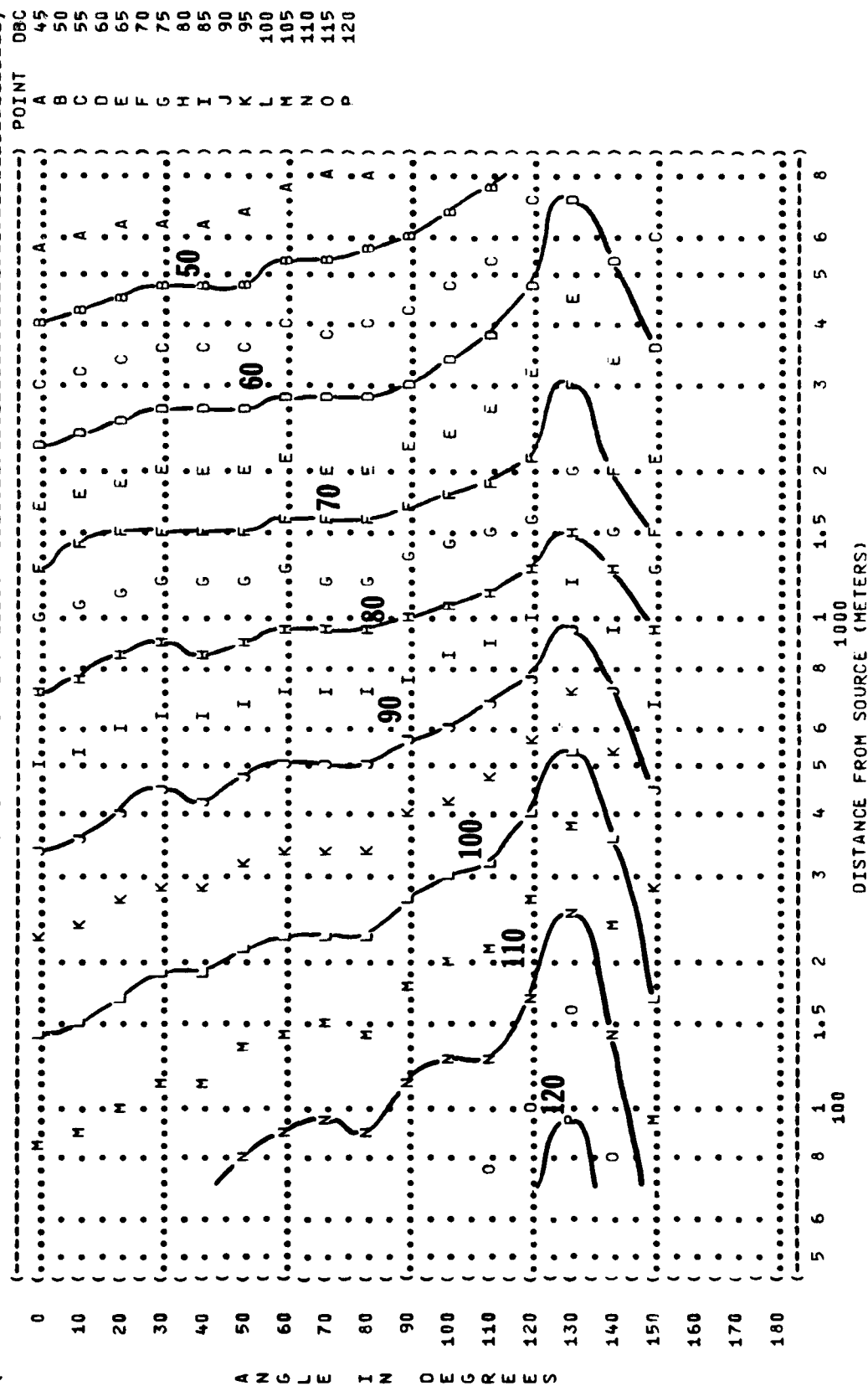
( ( FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
( ( EQUAL LEVEL CONTOURS (DBC)
( (
( ( 6
( (
( ( NOISE SOURCE/SUBJECT:
( (
( ( OPERATION:
( (
( ( C-135B AIRCRAFT
( ( 90% RPM, ENGINE NO.2
( ( TF33-P-5
( ( OTHER ENGINES IDLE
( ( FAR FIELD NOISE
( ( FREE FLOW
( (
( ( METEOROLOGY:
( ( TEMP = 15 C
( ( BAR PRESS = .760 M HG
( ( REL HUMID = 70 %
( (
( ( IDENTIFICATION:
( (
( ( OMEGA 1.4
( (
( ( TEST AN-025-001
( (
( ( RUN 04
( (
( ( 22 MAR 79
( (
( ( PAGE 14
( (

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SOURCE (METERS)

6

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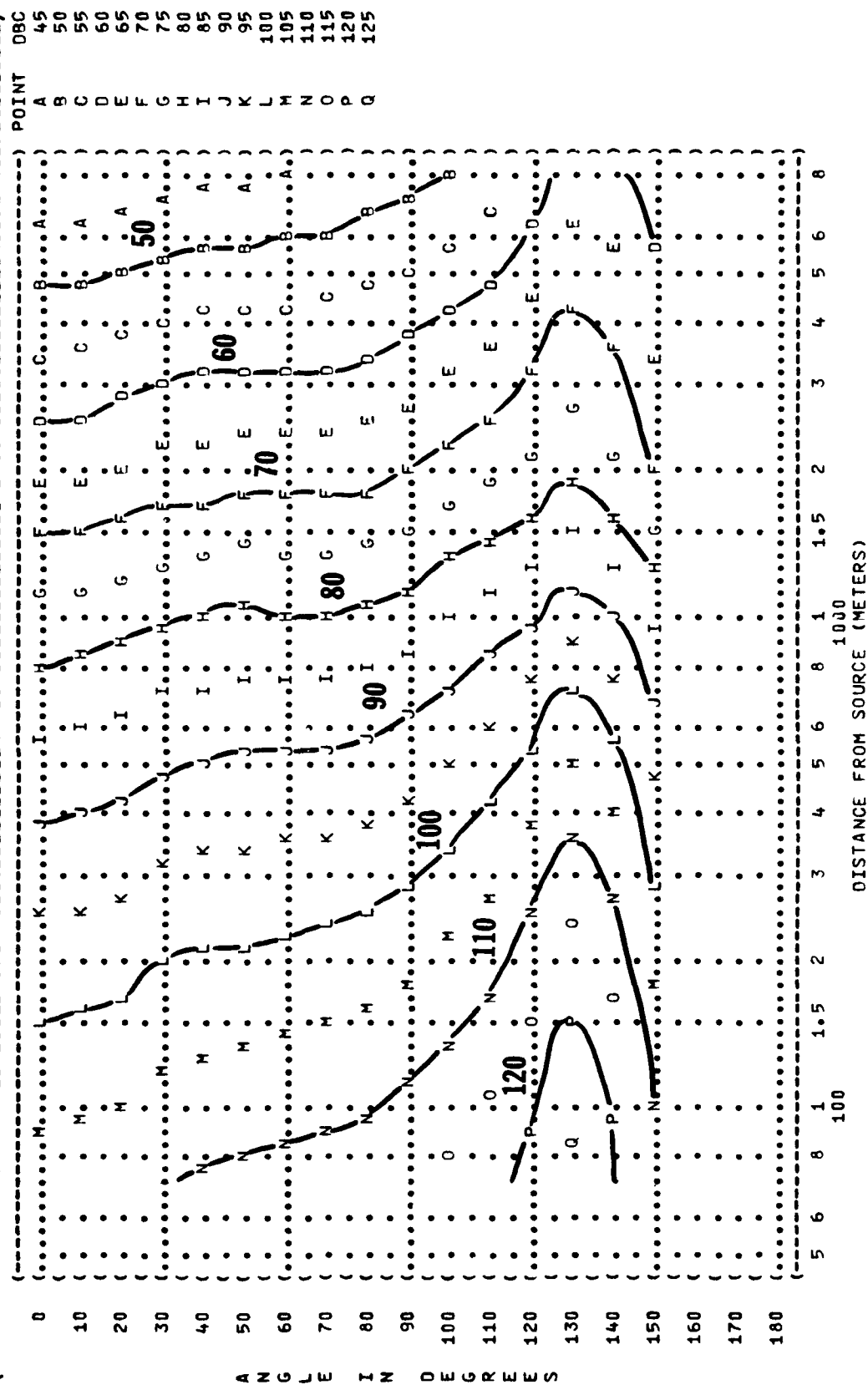
(FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
EQUAL LEVEL CONTOURS (DBC)

3

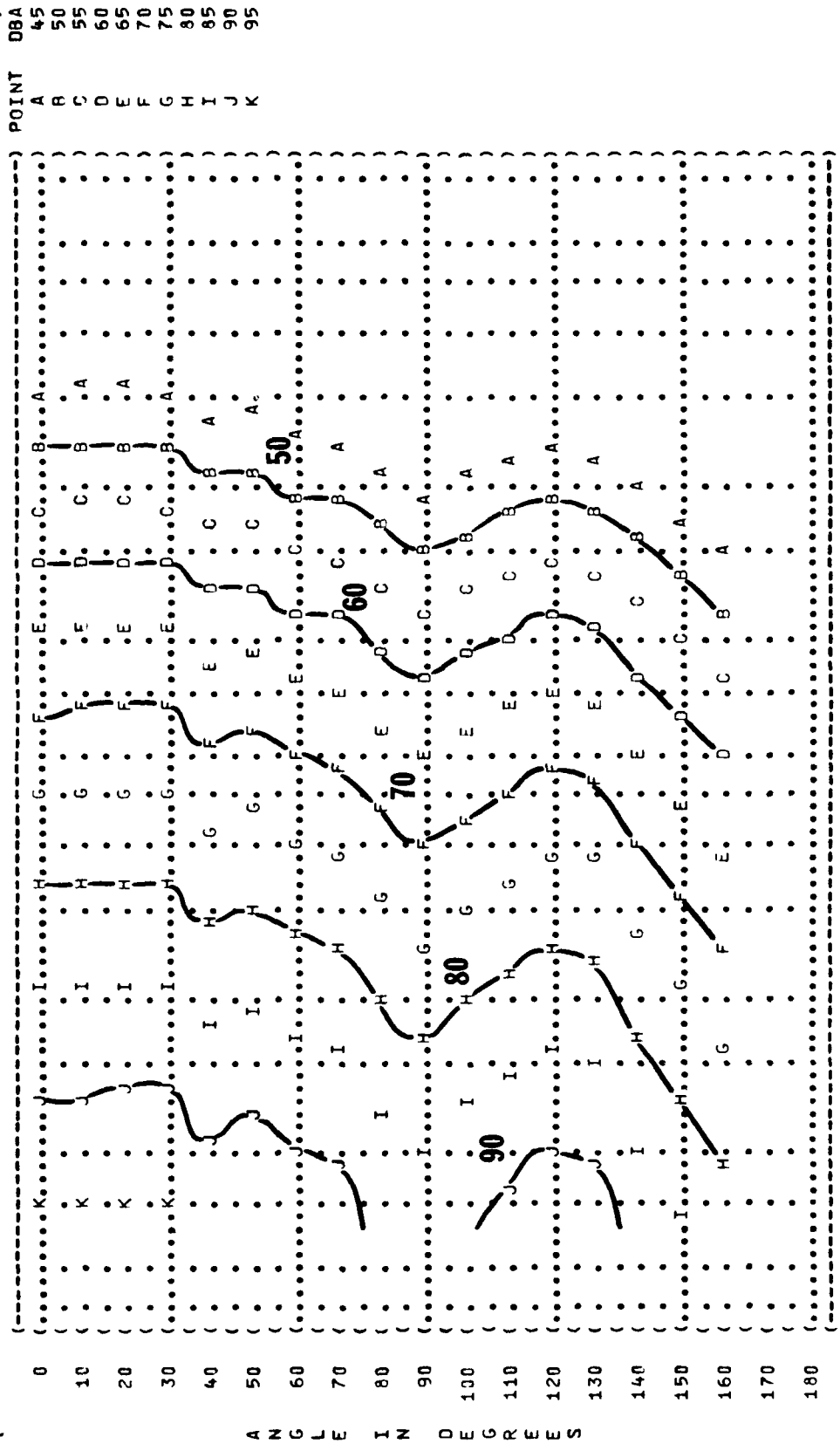
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( ( FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
( ( EQUAL LEVEL CONTOURS (DBC)
( (
( ( 6
( (
( ( NOISE SOURCE/SUBJECT: ( OPERATION:
( (
( ( C-135B AIRCRAFT ( MAXIMUM POWER ENGINE NO.2 ) TEMP = 15 C
( ( TF33-P-5 ( OTHER ENGINES IDLE ) BAR PRESS = .760 M HG
( ( FAR FIELD NOISE ( FREE FLOW ) REL HUMID = 70 %
( (
( ( IDENTIFICATION:
( (
( ( OMEGA 1.4
( ( TEST AN-025-001
( ( RUN 05
( ( 22 MAR 79
( ( PAGE 14
( (

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(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA))
 (7 EQUAL LEVEL CONTOURS (GBA))
 () IDENTIFICATION:)
 () OMEGA 1.4)
 () TEST AN-025-001)
 () RUN 01)
 () METEOROLOGY:)
 () TEMP = 15 C)
 () BAR PRESS = .760 M HG)
 () REL HUMID = 70 %)
 () 22 MAR 79)
 () PAGE 15)



() NOISE SOURCE/SUBJECT: () OPERATION: () METEOROLOGY: () POINT DBA
 () C-1358 AIRCRAFT () IDLE POWER () TEMP = 15 C () A
 () TF33-P-5 () 58% RPM () BAR PRESS = .760 M HG () R
 () FAR FIELD NOISE () ALL ENGINES () REL HUMID = 70 % () C
 () FREE FLOW () 22 MAR 79 () D
 () PAGE 15 () E
 () F
 () G
 () H
 () I
 () J
 () K

) IDENTIFICATION:
)

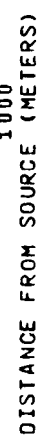
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METEOROLOGY:

TEMP = 15 C

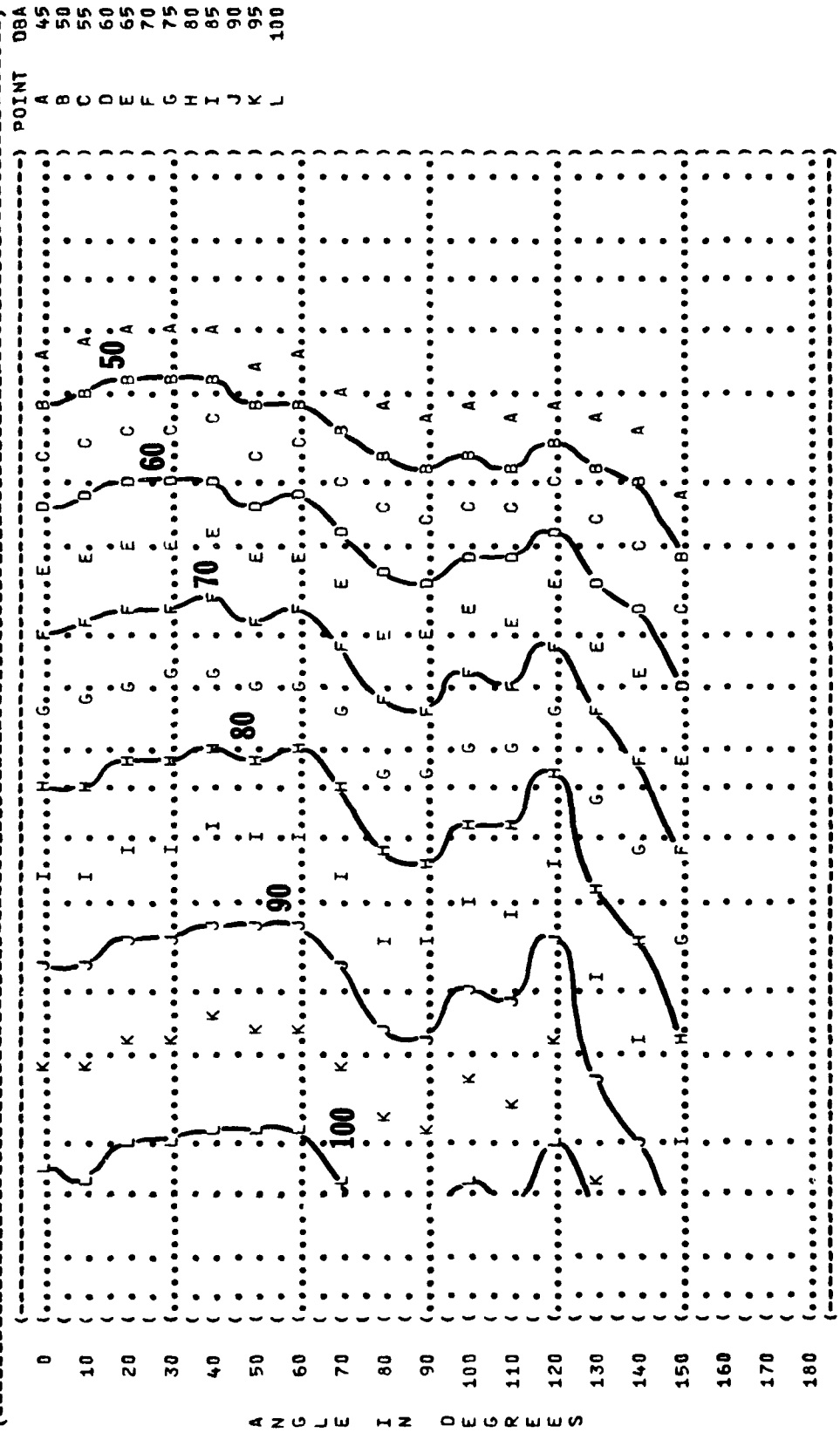
BAR PRESS = .160 PSI
REL HUMID = 70 %

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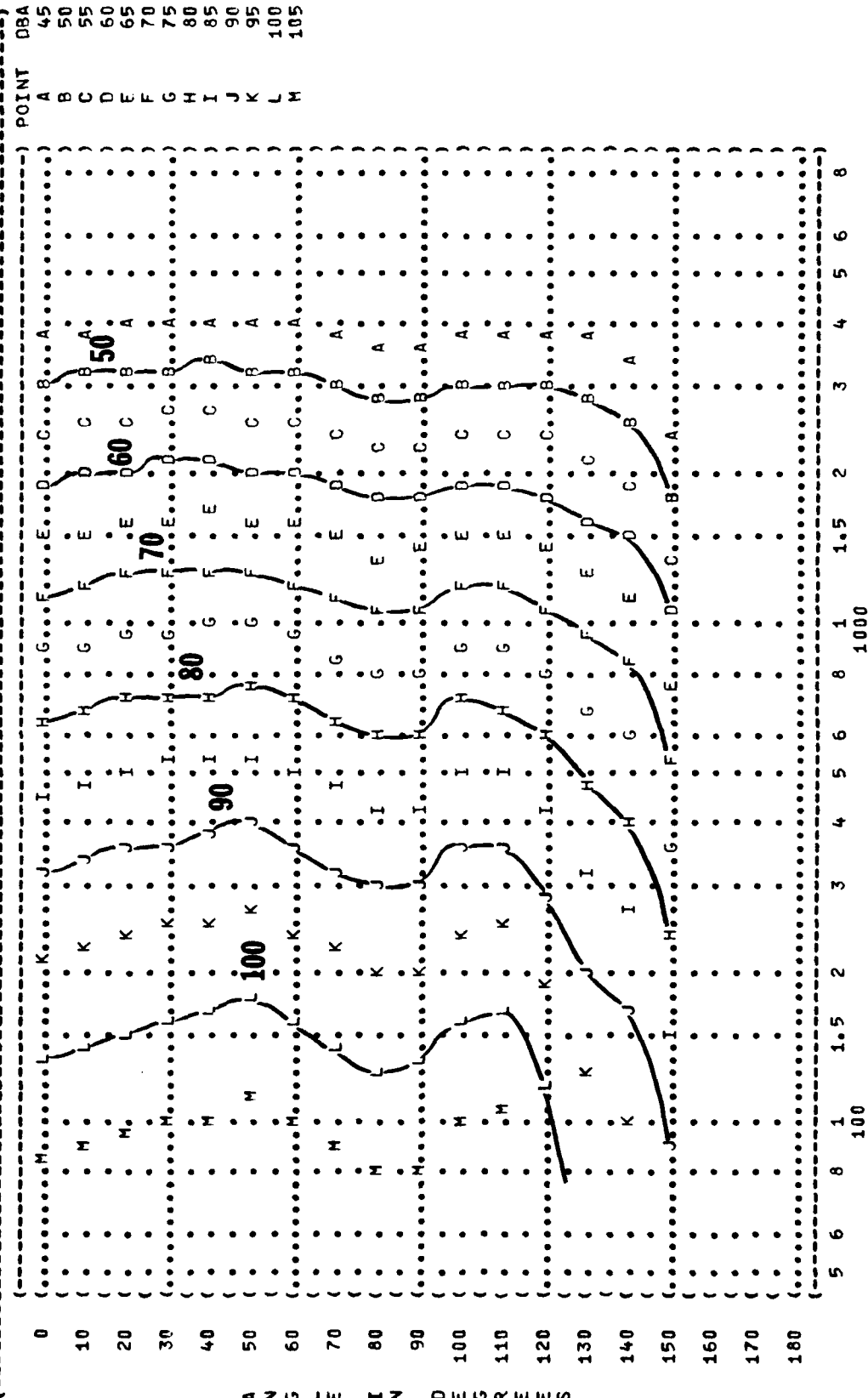
ASGJW HZ OWOXWWS

(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 (7
 (EQUAL LEVEL CONTOURS (DBA)
 () IDENTIFICATION:)
 () OMEGA 1.4
 () TEST AN-025-001
 () RUN 03
 () METEOROLOGY:)
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () PAGE 15
 () NOISE SOURCE/SUBJECT: (OPERATION:)
 () C-135B AIRCRAFT (80% RPM, ENGINE NO. 2
 () TF33-P-5 (OTHER ENGINES IDLE
 () FAR FIELD NOISE (FREE FLOW)



() POINT DBA
 () A 45
 () B 50
 () C 55
 () D 60
 () E 65
 () F 70
 () G 75
 () H 80
 () I 85
 () J 90
 () K 95
 () L 100

(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 (7
 (EQUAL LEVEL CONTOURS (OBA)
 () IDENTIFICATION:
 ()
 () OMEGA 1.4
 () TEST AN-025-001
 () RUN 04
 ()
 (NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:
 () TEMP = 15 C
 (C-135B AIRCRAFT (90% RPM, ENGINE NO.2) BAR PRESS = .760 M HG
 (YF33-P-5 (OTHER ENGINES IDLE) REL HUMID = 70 %
 (FAR FIELD NOISE (FREE FLOW)
 () PAGE 15



DISTANCE FROM SOURCE (METERS)

IDENTIFICATION:

OMEGA 1.4

TEST AN-025-001

) RUN 06

METEOROLOGY:

TEMP = 15 C

BAR PRESS = 760 M HG

REL HUMID = 70 %

) PAGE 15

(C) OPERATION:

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97% RPM. ENGINE NO. 2

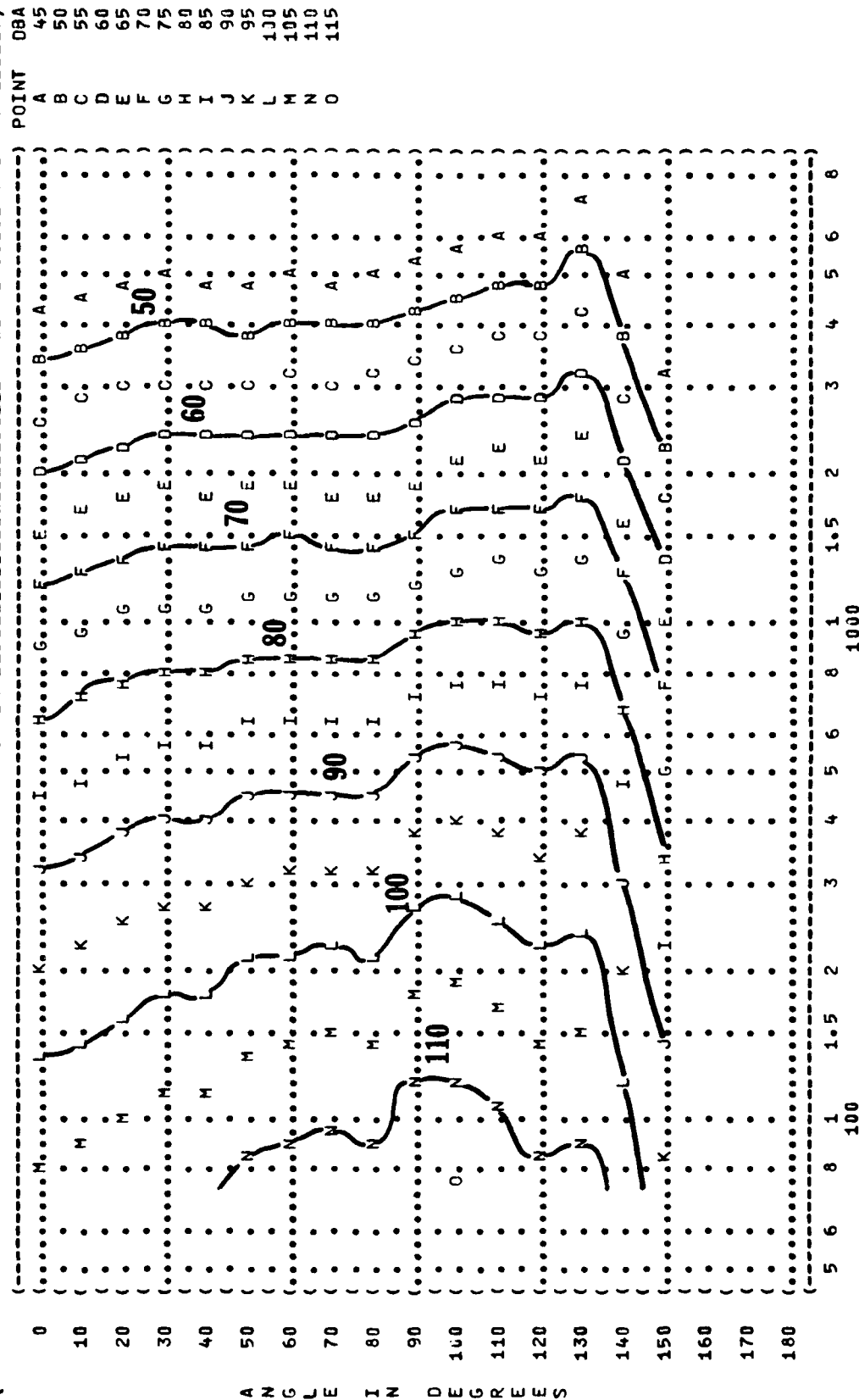
OTHER ENGINEERING

NOISE SOURCE/SUBJECT:

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C-135B AIRCRAFT

TF 33-P-5



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) IDENTIFICATION:
)
)
) OMEGA 1.4
) TEST AN-025-001
) RUN 05
)
) 22 MAR 79
)
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) PAGE 15
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OUND LEVEL {OASLA}
(DBA)

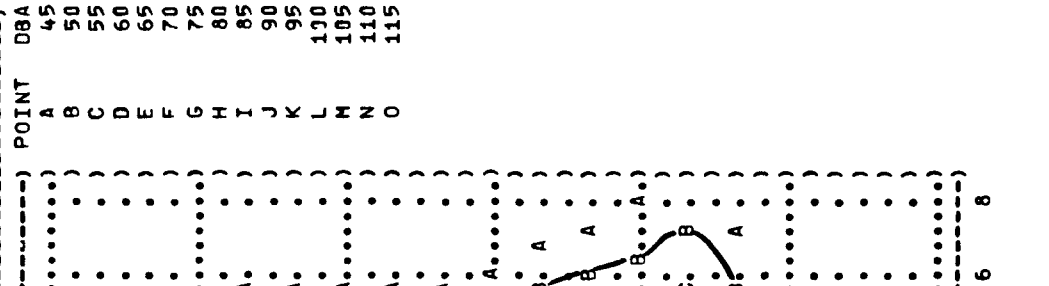
OPERATION:

MAXIMUM POWER ENGINE NO.2
OTHER ENGINES IDLE
FREE FLOW

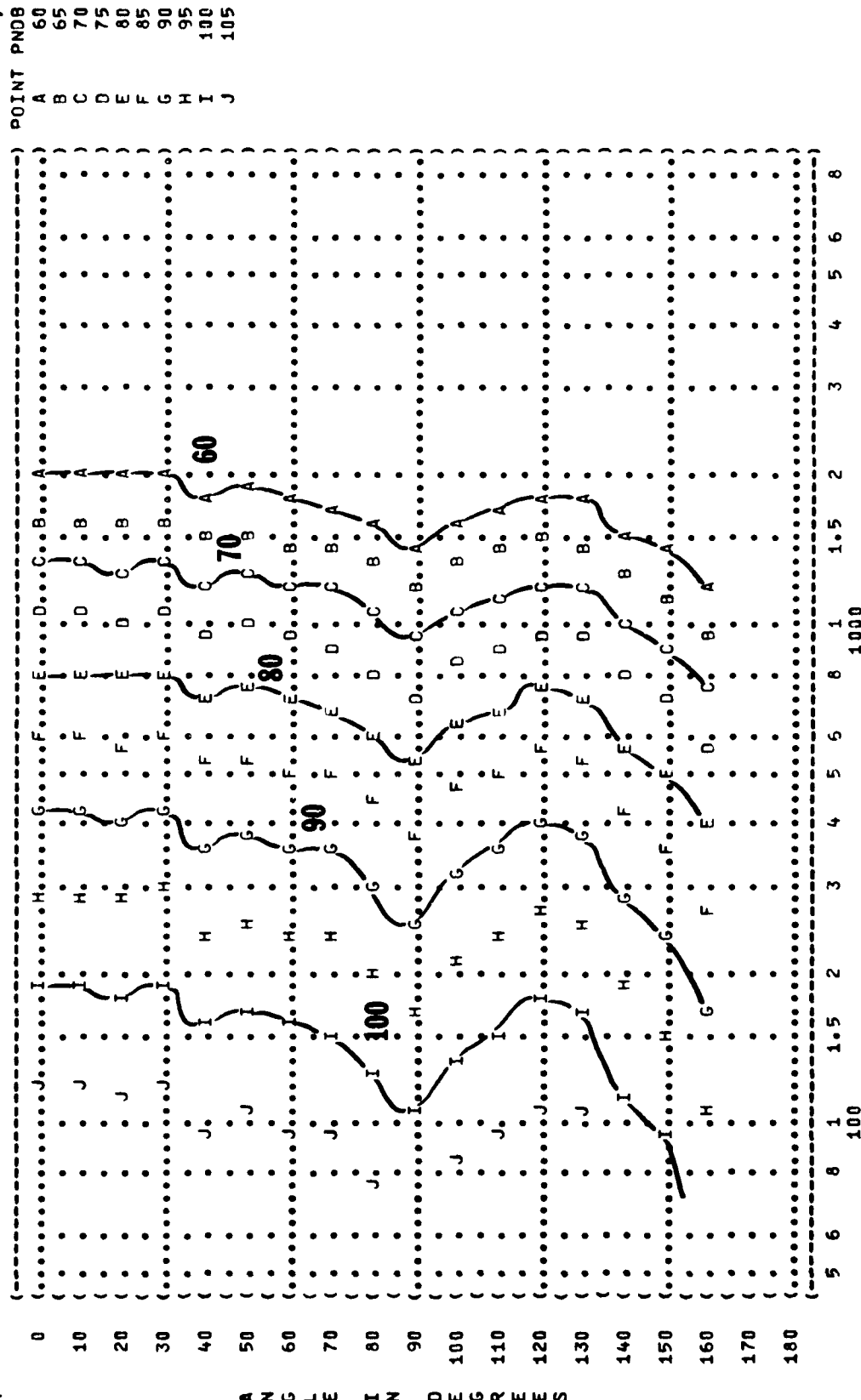
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) IDENTIFICATION:
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) OMEGA 1.4
) TEST AN-025-001
) RUN 05
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) 22 MAR 79
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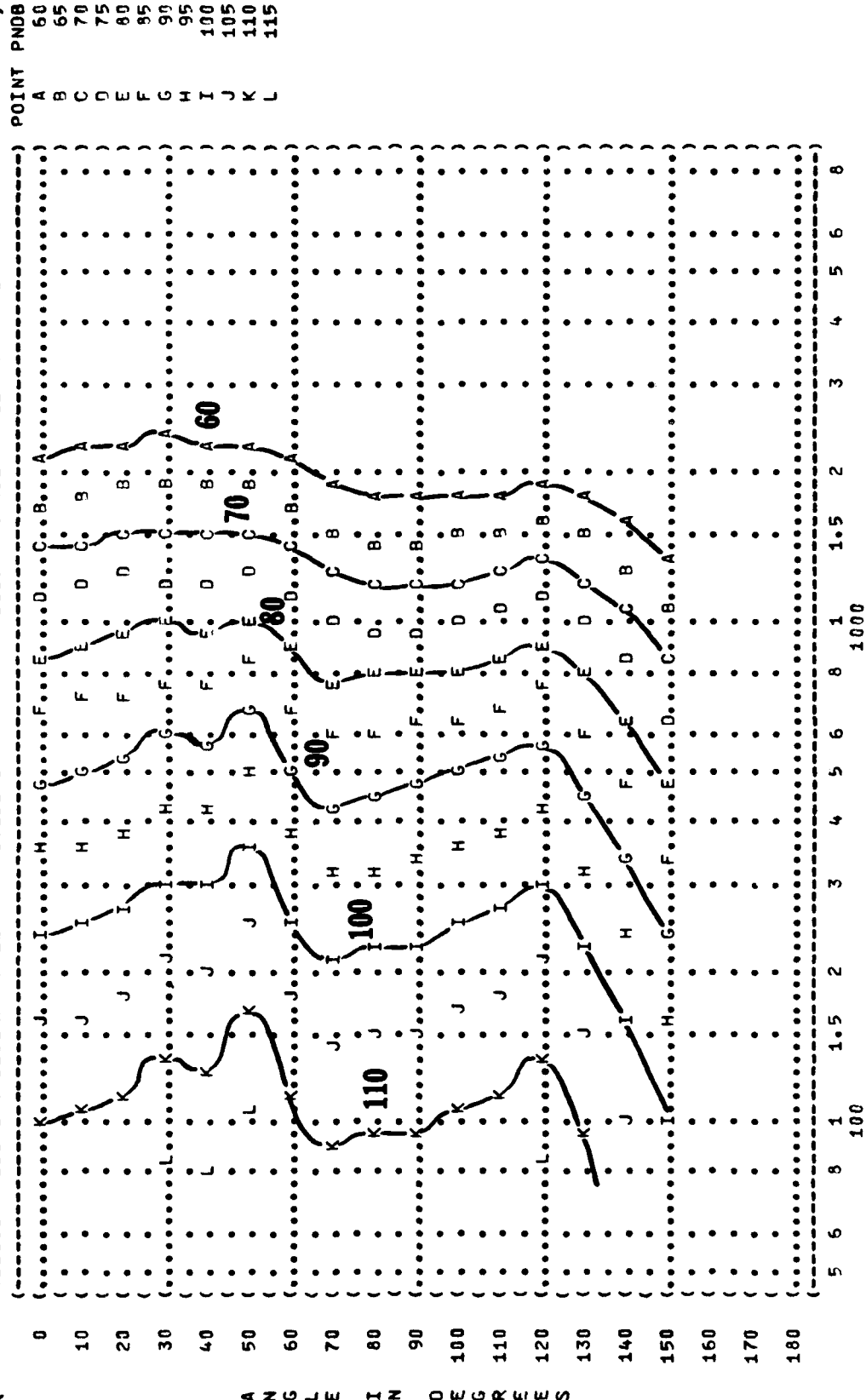


(FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
 (8 EQUAL LEVEL CONTOURS (PNDB)
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST AN-025-001
 () RUN 01
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () PAGE 16
 () NOISE SOURCE/SUBJECT:
 () OPERATION:
 () IDLE POWER
 () 58% RPM
 () ALL ENGINES
 () FREE FLOW
 () C-135B AIRCRAFT
 () TF33-P-5
 () FAR FIELD NOISE

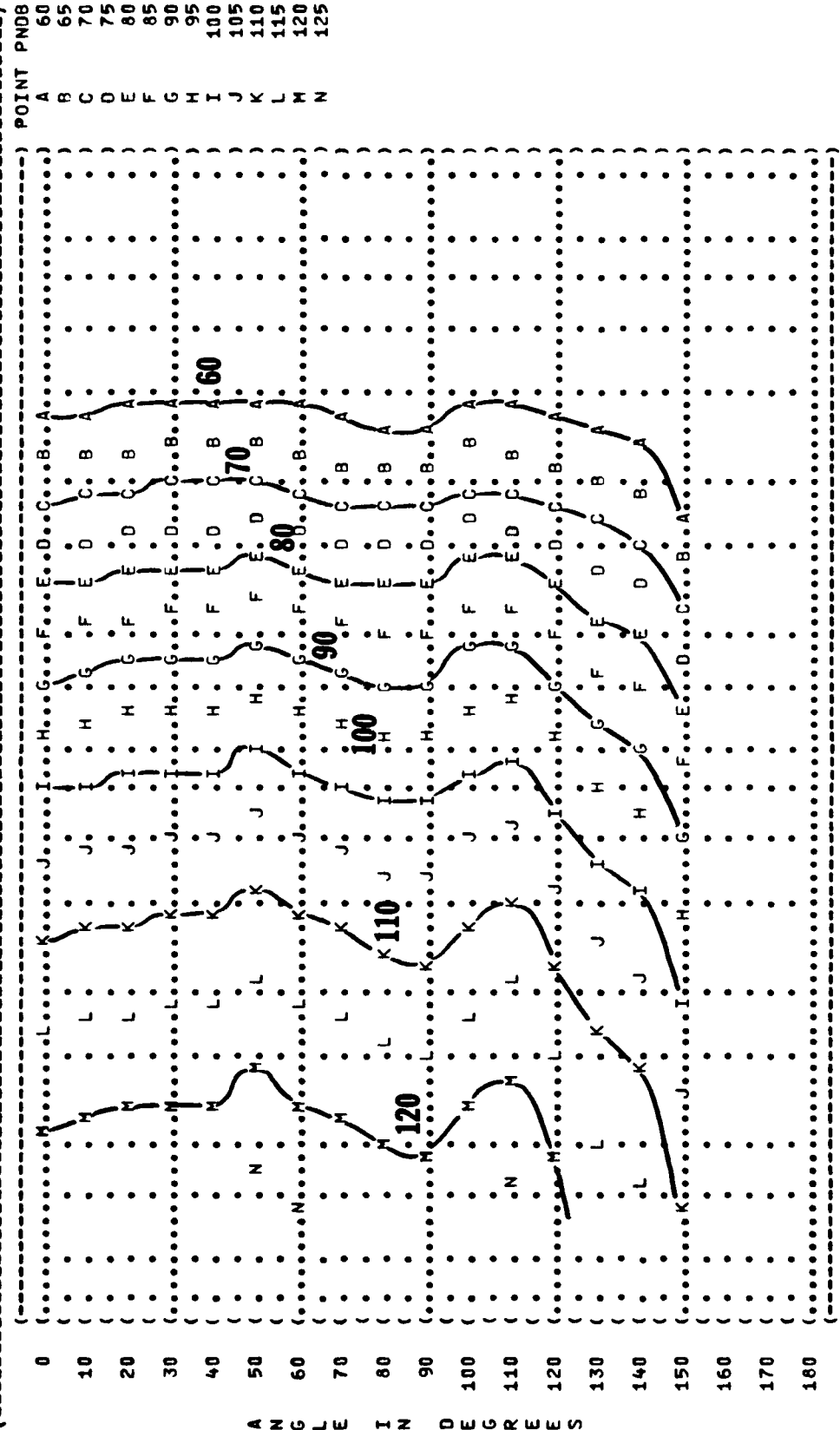


A N G L E I N D E G R E E S

(FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
 (8
 (IDENTIFICATION:
 ()
 () OMEGA 1.4
 () TEST AN-025-001
 () RUN 02
 ()
 (NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:
 ()
 () C-135B AIRCRAFT (70% RPM, ENGINE NO. 2) TEMP = 15 C
 () TF33-P-5 (OTHER ENGINES IDLE) BAR PRESS = .760 M HG
 () FAR FIELD NOISE (FREE FLOW) REL HUMID = 70 %
 () PAGE 16
 ()



(FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT))
 (8)
 () IDENTIFICATION:)
 () OMEGA 1.4)
 () TEST AN-025-001)
 () RUN 04)
 () METEOROLOGY:)
 () TEMP = 15 C)
 () BAR PRESS = .760 M HG)
 () REL HUMID = 70 %)
 () 22 MAR 79)
 () PAGE 16)
 ()
 (NOISE SOURCE/SUBJECT:)
 () OPERATION:)
 () C-135B AIRCRAFT)
 () 90% RPM, ENGINE NO.2)
 () TF33-P-5)
 () OTHER ENGINES IDLE)
 () FAR FIELD NOISE)
 () FREE FLOW)



5 6 8 1 1.5 2 3 4 5 6 8
 100
 1000
 DISTANCE FROM SOURCE (METERS)

IDENTIFICATION:)

OMEGA 1.4

(OPERATION:

TEST. RUN 46

2

97% RPM, ENGINE NO. 2

NOV 20 1979

(1) FREE FLOW

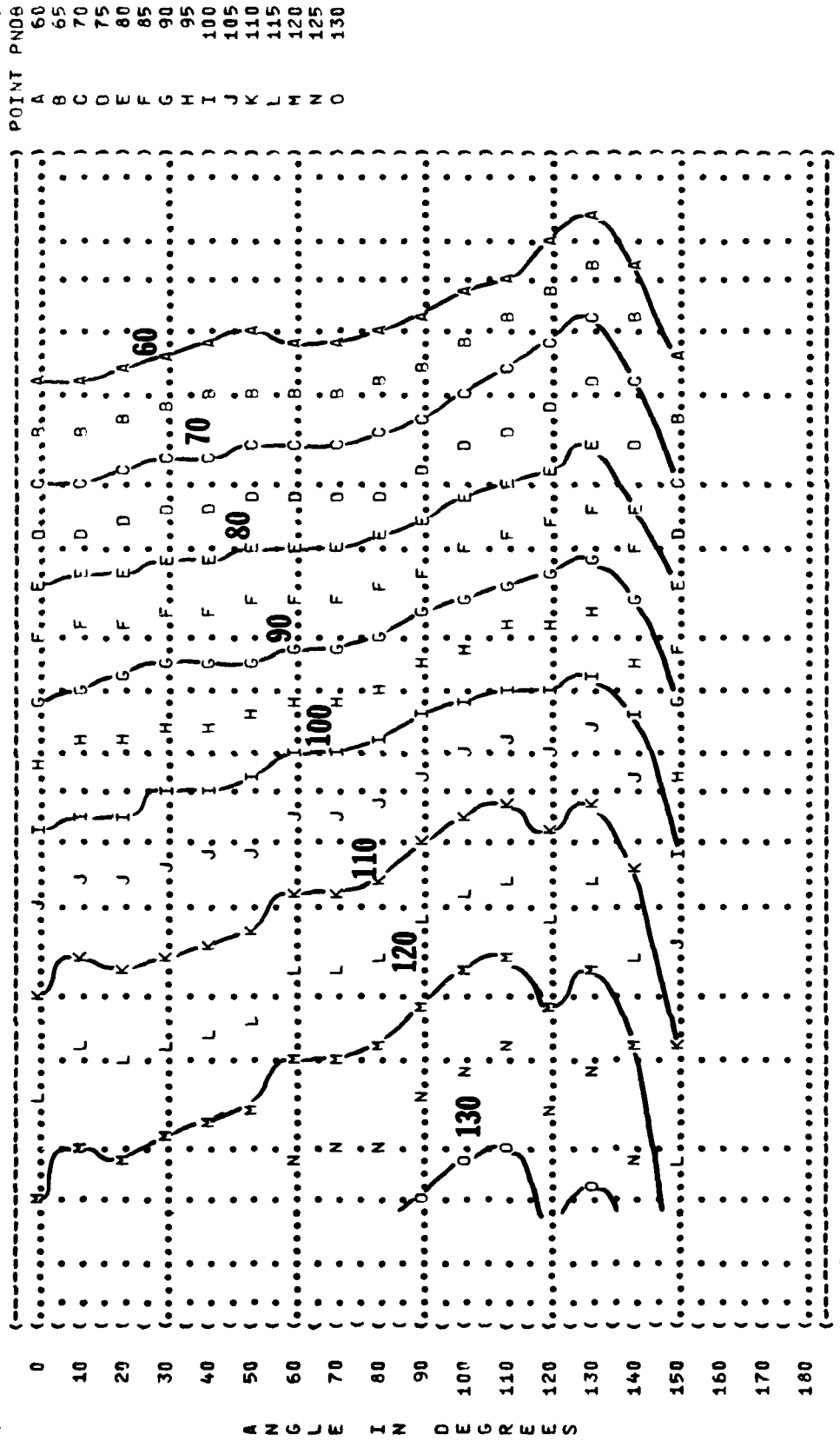
PAGE 15

POINT PNDB



DISTANCE FROM SOURCE (METERS)

(FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
 (IDENTIFICATION:)
 (8)
 (NOISE SOURCE/SUBJECT:)
 (C-135B AIRCRAFT)
 (1F33-P-5)
 (FAR FIELD NOISE)
 (OPERATION:)
 (MAXIMUM POWER ENGINE NO.2)
 (OTHER ENGINES IDLE)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (OMEGA 1.4)
 (TEST AN-025-001)
 (RUN 05)
 (PAGE 16)



10



100

IDENTIFICATION:

) OMEGA 1.4

► METEOROLOGY:

1231 04
1 RUN 04

BAR PRESS = .760 M

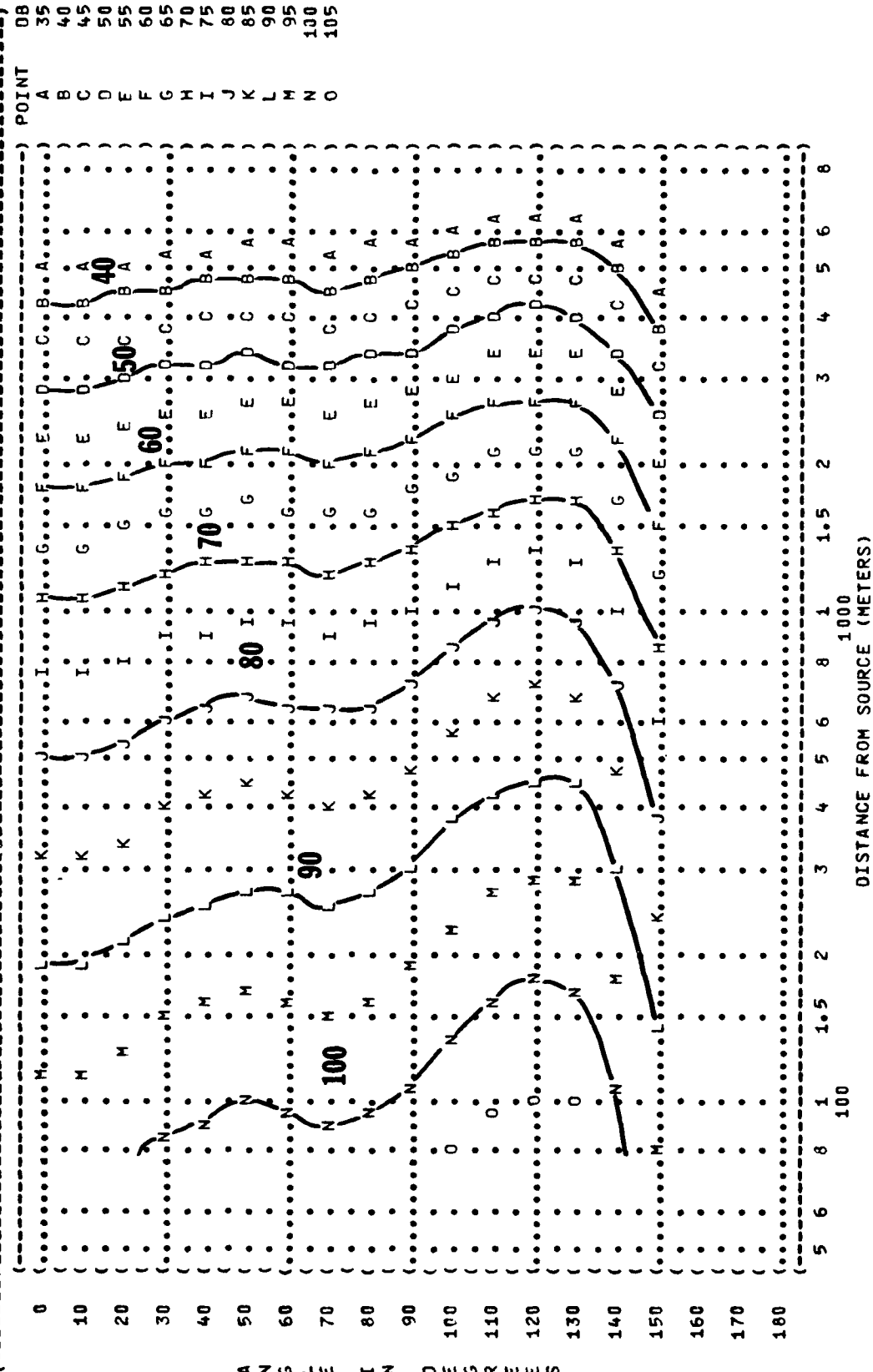
REL HUMID = 70 %



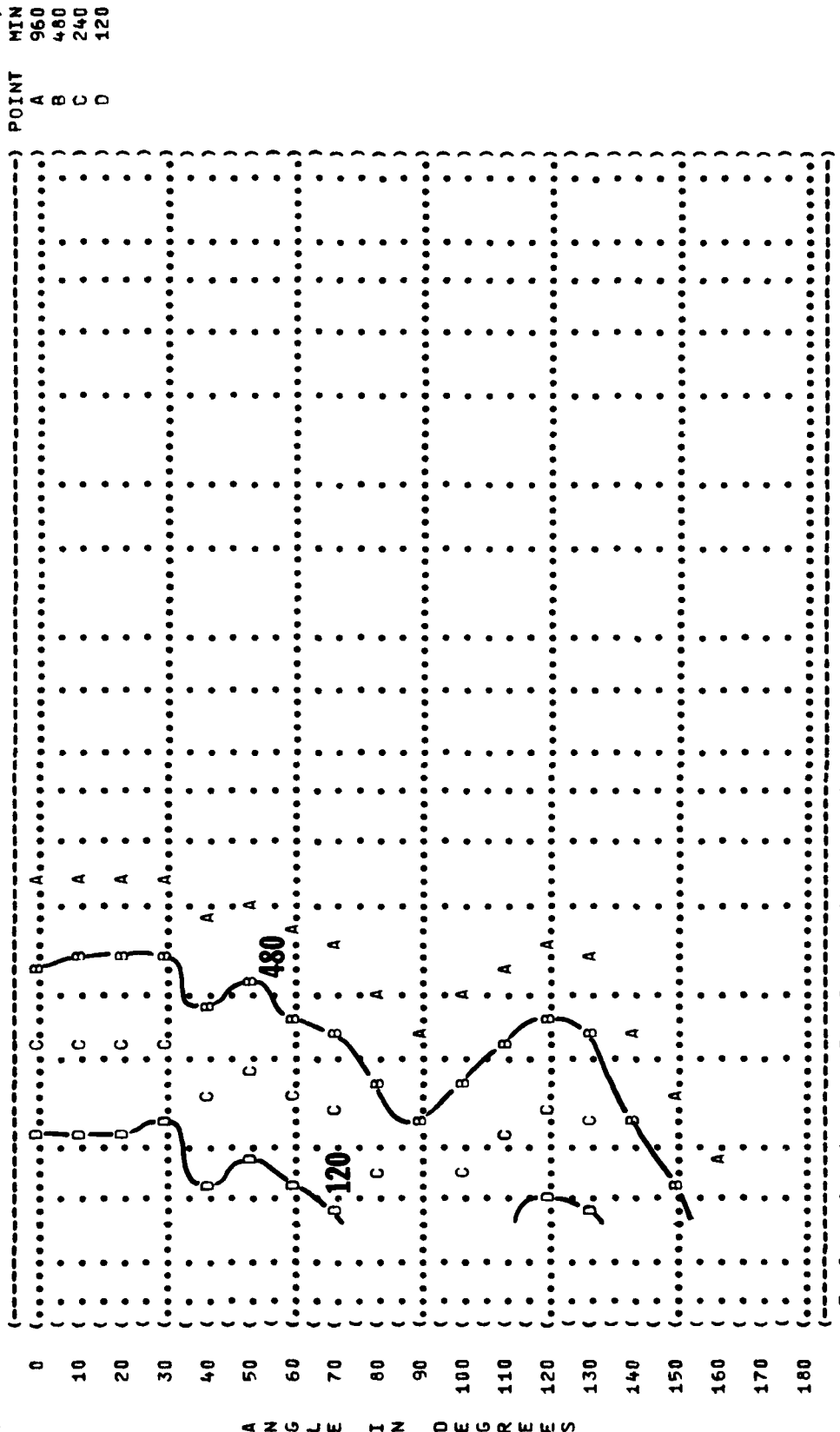

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(-----)
( ) FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
( )      9
( )      EQUAL LEVEL CONTOURS (DB)
(-----)
( ) NOISE SOURCE/SUBJECT:
( )
( ) C-135B AIRCRAFT
( )      MAXIMUM POWER ENGINE NO.2
( )      OTHER ENGINES IDLE
( )      FREE FLOW
( )
( ) METEOROLOGY:
( )      TEMP = 15 C
( )      BAR PRESS = .760 M HG
( )      REL HUMID = 70 %
( )
( ) IDENTIFICATION:
( )
( ) OMEGA 1.4
( ) TEST AN-025-001
( ) RUN 05
( ) 22 MAR 79
( ) PAGE 17
(-----)

```



(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 () EQUAL TIME CONTOURS (MINUTES))
 (10 NO PROTECTION) OMEGA 1.4
 () NOISE SOURCE/SUBJECT:) TEST AN-025-001
 ()) RUN 01
 () C-135B AIRCRAFT) METEOROLOGY:)
 ()) TEMP = 15 C)
 () TF33-P-5) BAR PRESS = .760 M HG)
 ()) REL HUMID = 70 %)
 () FAR FIELD NOISE) FREE FLOW)
 ()) PAGE 7)



A N G L E I N D E G R E E S

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

MINIMUM QPL EAR MUFFS
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS
COMFIT TRIPLE FLANGE EAR PLUGS
H-133 GROUND COMMUNICATION UNIT

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY

AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS

FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)

UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

MINIMUM QPL EAR MUFFS

AMERICAN OPTICAL 1700 EAR MUFFS

V-51R EAR PLUGS

COMFIT TRIPLE FLANGE EAR PLUGS

H-133 GROUND COMMUNICATION UNIT

DISTANCE FROM SOURCE (METERS)										
5	6	8	1	1.5	2	3	4	5	6	8
100										
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----- PAGE 7 -----

.....

FREE FLOW

D NOISE

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PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

MINIMUM OPL EAR MUFFS
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS
COMFIT TRIPLE FLANGE EAR PLUGS
H-133 GROUND COMMUNICATION UNIT

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UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

H-133 GROUND COMMUNICATION UNIT

DISTANCE FROM SOURCE (METERS)

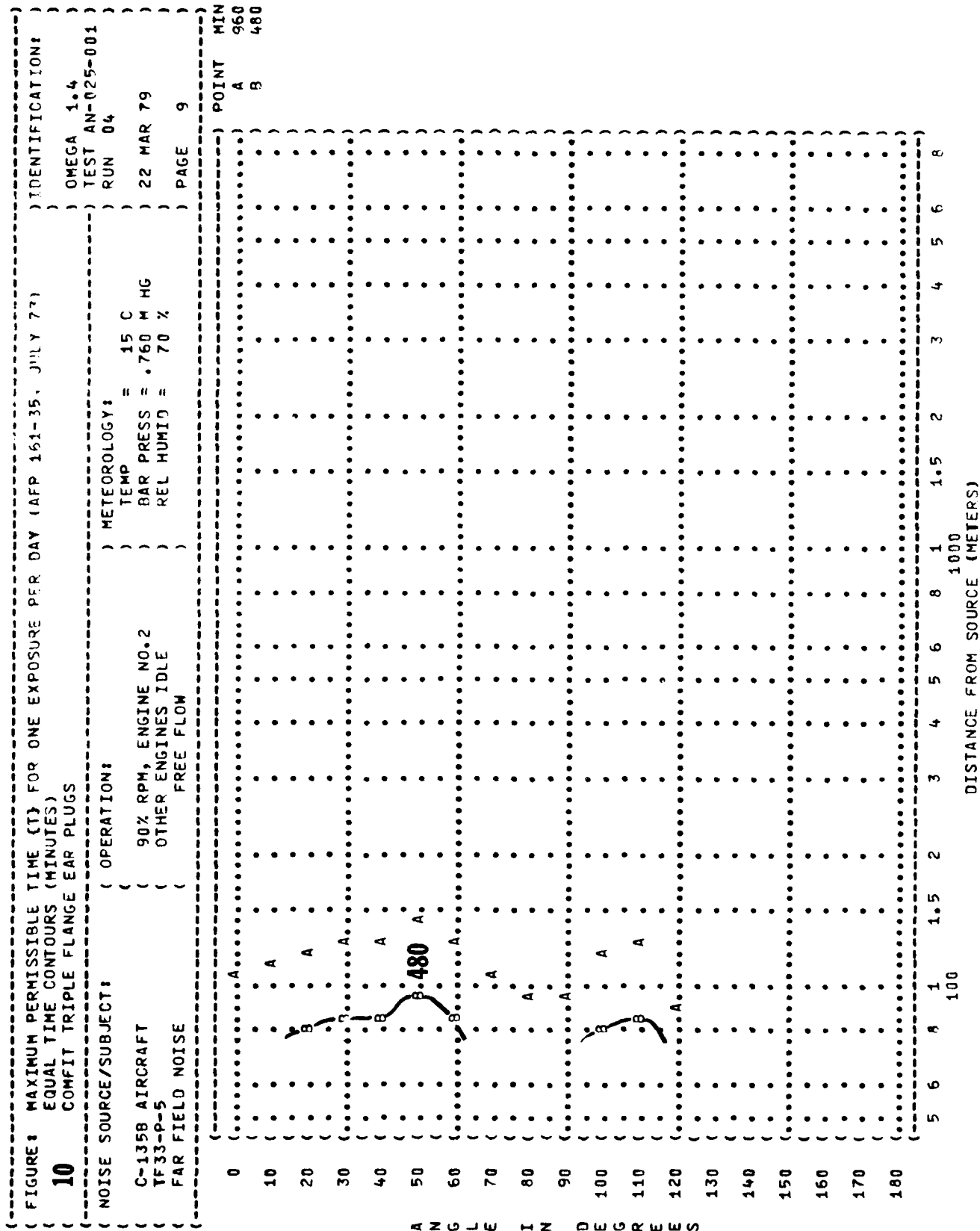
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DISTANCE FROM SOURCE (METERS)

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POINT	MIN	950
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1000
DISTANCE FROM SOURCE (METERS)

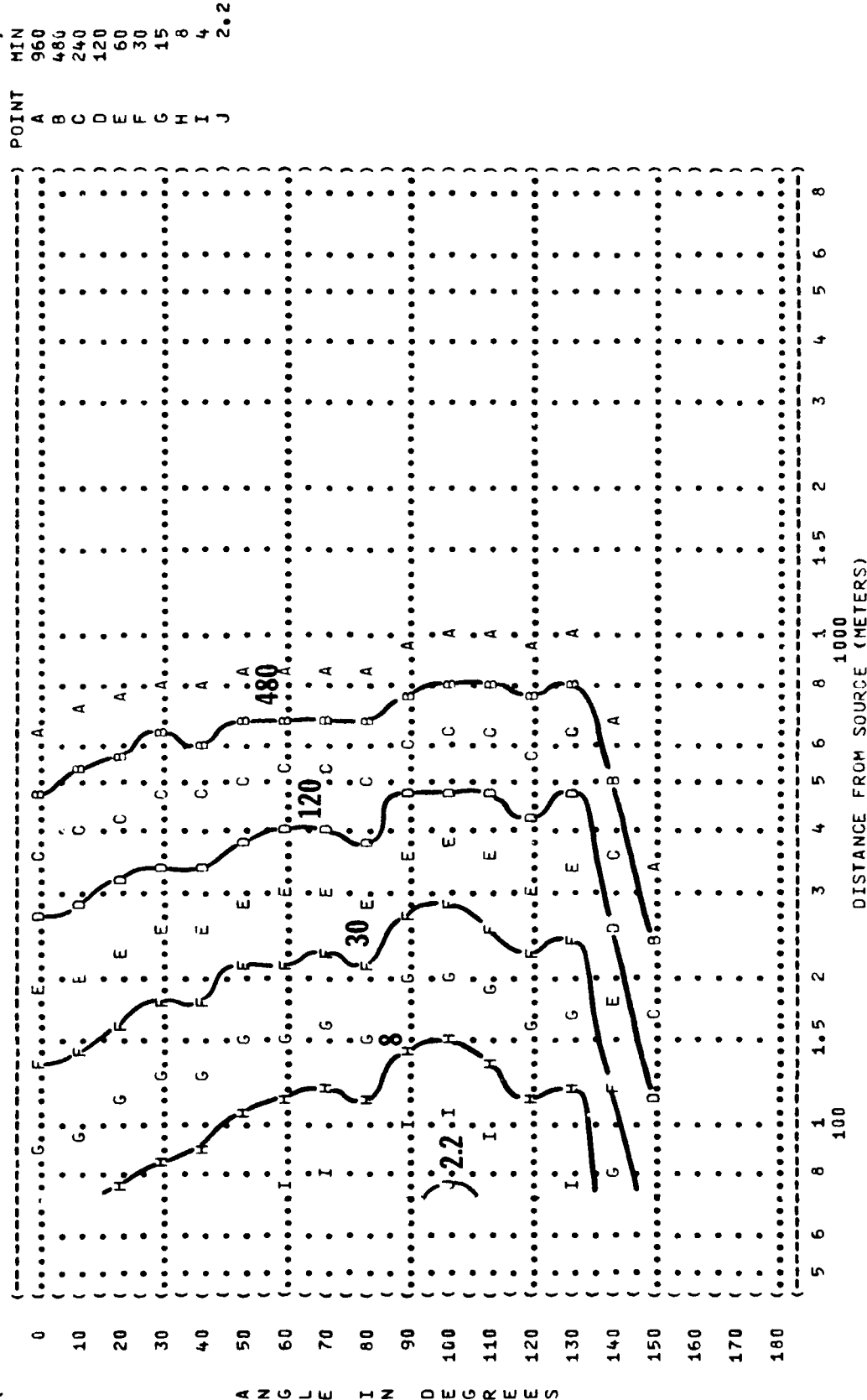
FIGURE:	MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)	IDENTIFICATION:
	EQUAL TIME CONTOURS (MINUTES)	
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NOISE SOURCE/SUBJECT:	OPERATION:	OMEGA 1.4
		TEST AN-025-001
		RUN 04
	METEOROLOGY:	
	TEMP = 15 C	
C-135B AIRCRAFT	90% RPM, ENGINE NO.2	22 MAR 79
TF33-P-5	OTHER ENGINES IDLE	
FAR FIELD NOISE	FREE FLOW	PAGE 11

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS

DISTANCE FROM SOURCE (METERS)																			
5	6	8	1	1.5	2	3	4	5	6	8	1000	1	1.5	2	3	4	5	6	8

A Z U J W I N O W U R W W S

(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 (10) EQUAL TIME CONTOURS (MINUTES))
 (NO PROTECTION)
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:)
 () () TEMP = 15 C)
 (C-135B AIRCRAFT) 97% RPM, ENGINE NO. 2) BAR PRESS = .760 M HG)
 (TF33-P-5) OTHER ENGINES IDLE) REL HUMID = 70 %)
 (FAR FIELD NOISE) FREE FLOW)
 () () PAGE 7)



A N G L E I N D E G R E E S

	(-	-	-	-	-	-	-	-)	MIN	POINT
0	(.)	A	960
	(.)	B	480
10	(.)	C	240
	(.)	D	120




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(-----)
( ) FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION:
( ) 10 EQUAL TIME CONTOURS (MINUTES) )
( ) COMFIT TRIPLE FLANGE EAR PLUGS ) OMEGA 1.4
(-----)
( ) NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: ) TEST AN-025-001
( ) ( ) TEMP = 15 C ) RUN 06
( ) C-135B AIRCRAFT ( 97% RPM,ENGINE NO.2 ) BAR PRESS = .760 M HG ) 20 NOV 79
( ) TF33-P-5 ( OTHER ENGINES IDLE ) REL HUMID = 70 % )
( ) FAR FIELD NOISE ( FREE FLOW ) ) PAGE 11
(-----)
```

MIN 960 480 240 120

POINT A B C D

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180

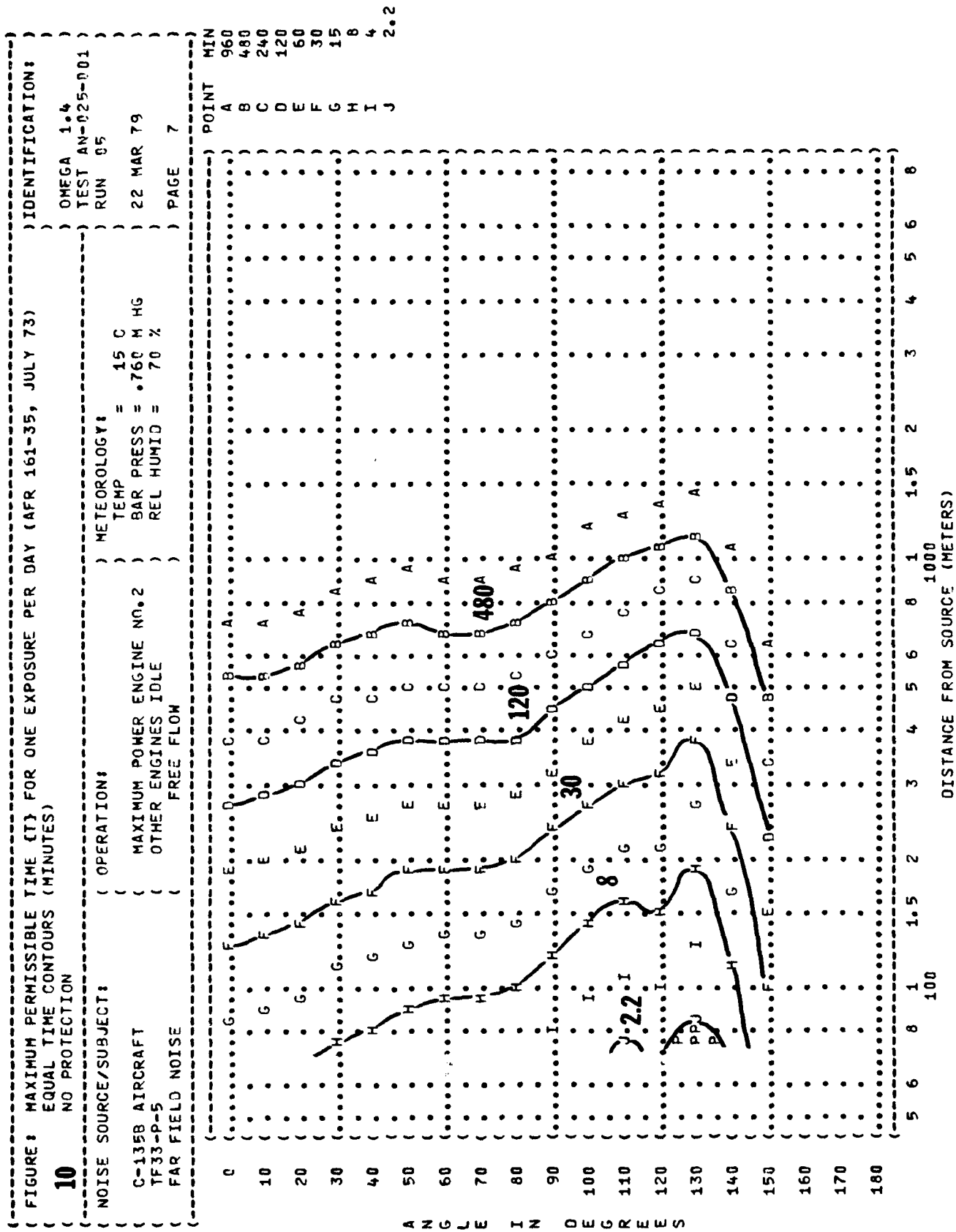
A N S L E I N D E G R E E S

DISTANCE FROM SOURCE (METERS)

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(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION:
( EQUAL TIME CONTOURS (MINUTES) ) )
( H-133 GROUND COMMUNICATION UNIT ) OMEGA 1.4
( ) TEST AN-025-001
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY:
( C-135B AIRCRAFT ) ( 97% RPM,ENGINE NO.2 ) TEMP = 15 C
( TF33-P-5 ) ( OTHER ENGINES IDLE ) BAR PRESS = .760 M HG
( FAR FIELD NOISE ) ( FREE FLOW ) REL HUMID = 70 %
( ) PAGE 12
(-----)
```

MIN	POINT
0	A
10	B
20	C
30	A
40	A
50	B
60	A
70	B
80	A
90	C
100	A
110	B
120	A
130	C
140	A
150	
160	
170	
180	

1000
DISTANCE FROM SOURCE (METERS)

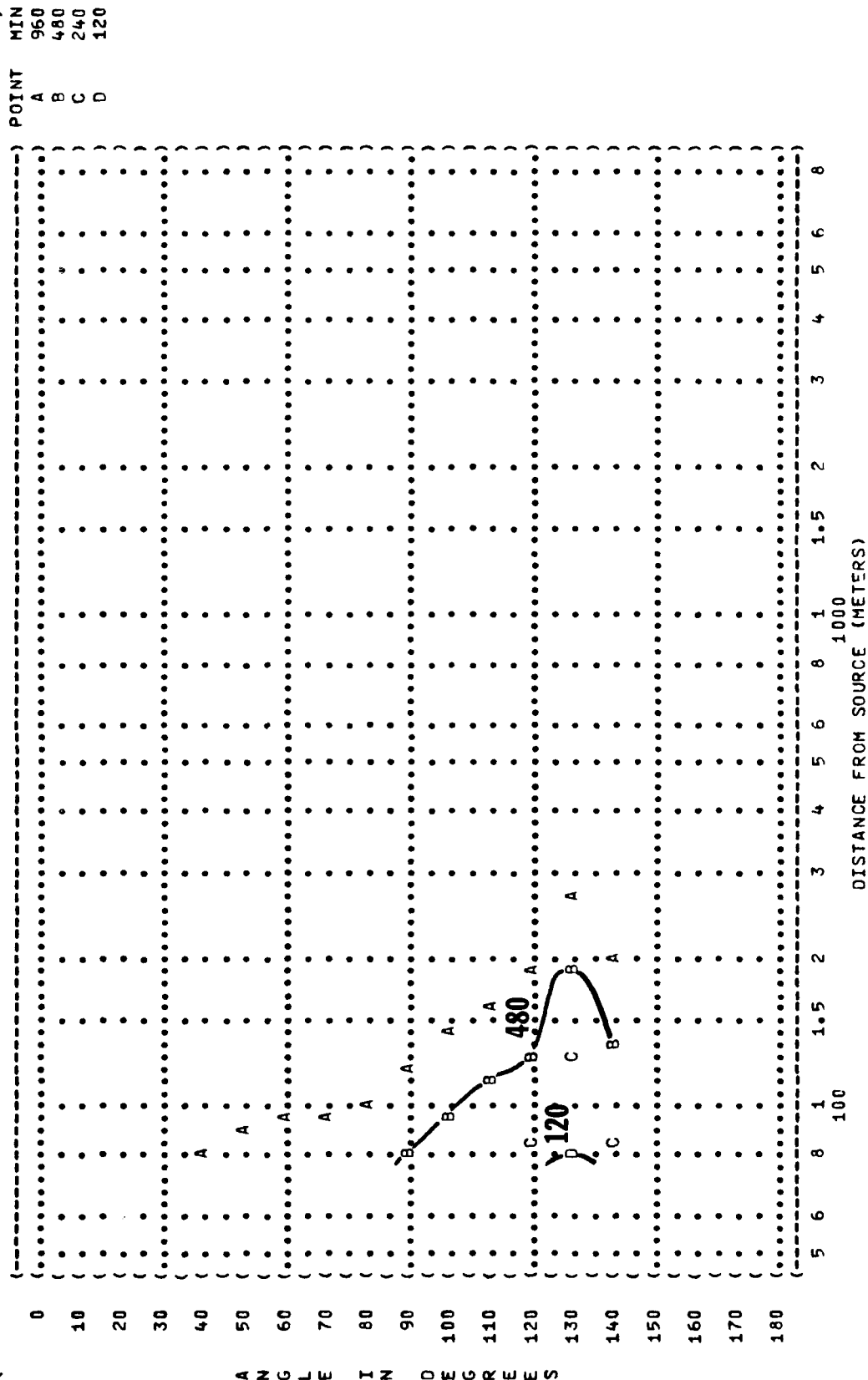


P ADDITIONAL EAR PROTECTION REQUIRED.

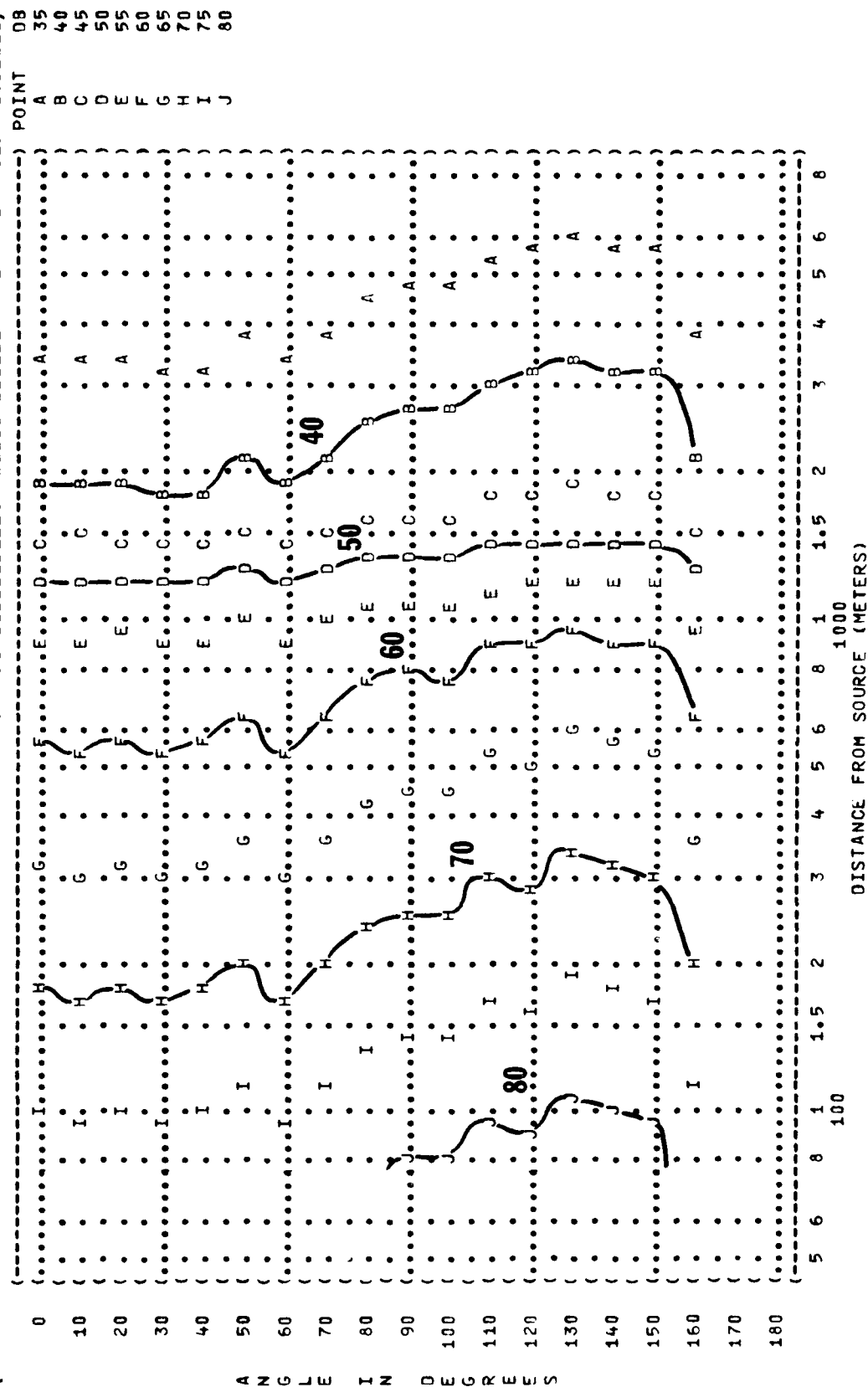

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(-----)
( ( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( ( EQUAL TIME CONTOURS (MINUTES) ) )
( ( 10 W-133 GROUND COMMUNICATION UNIT ) OMEGA 1.4 )
(-----)
( ( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: ) TEST AN-025-001 )
( ( ) ) ) RUN 05 )
( ( C-1358 AIRCRAFT ) MAXIMUM POWER ENGINE NO.2 ) TEMP = 15 C ) )
( ( TF33-P-5 ) OTHER ENGINES IDLE ) BAR PRESS = .760 M HG ) 22 MAR 79 )
( ( FAR FIELD NOISE ) FREE FLOW ) REL HUMID = 70 % ) )
( ( ) ) ) PAGE 12 )
(-----)

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(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 31.5 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-135B AIRCRAFT (IDLE POWER
 (TF33-P-5 (58% RPM
 (FAR FIELD NOISE (ALL ENGINES
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AN-025-001
 (RUN J1
 (22 MAR 79
 (PAGE 18



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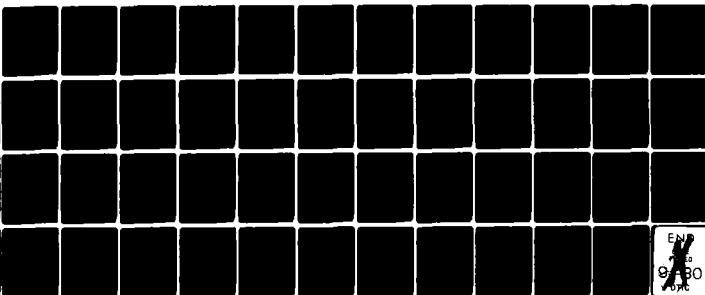
AIR FORCE AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATT--ETC F/6-1/2
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK. VOLUME 119. C-135B A--ETC(U)
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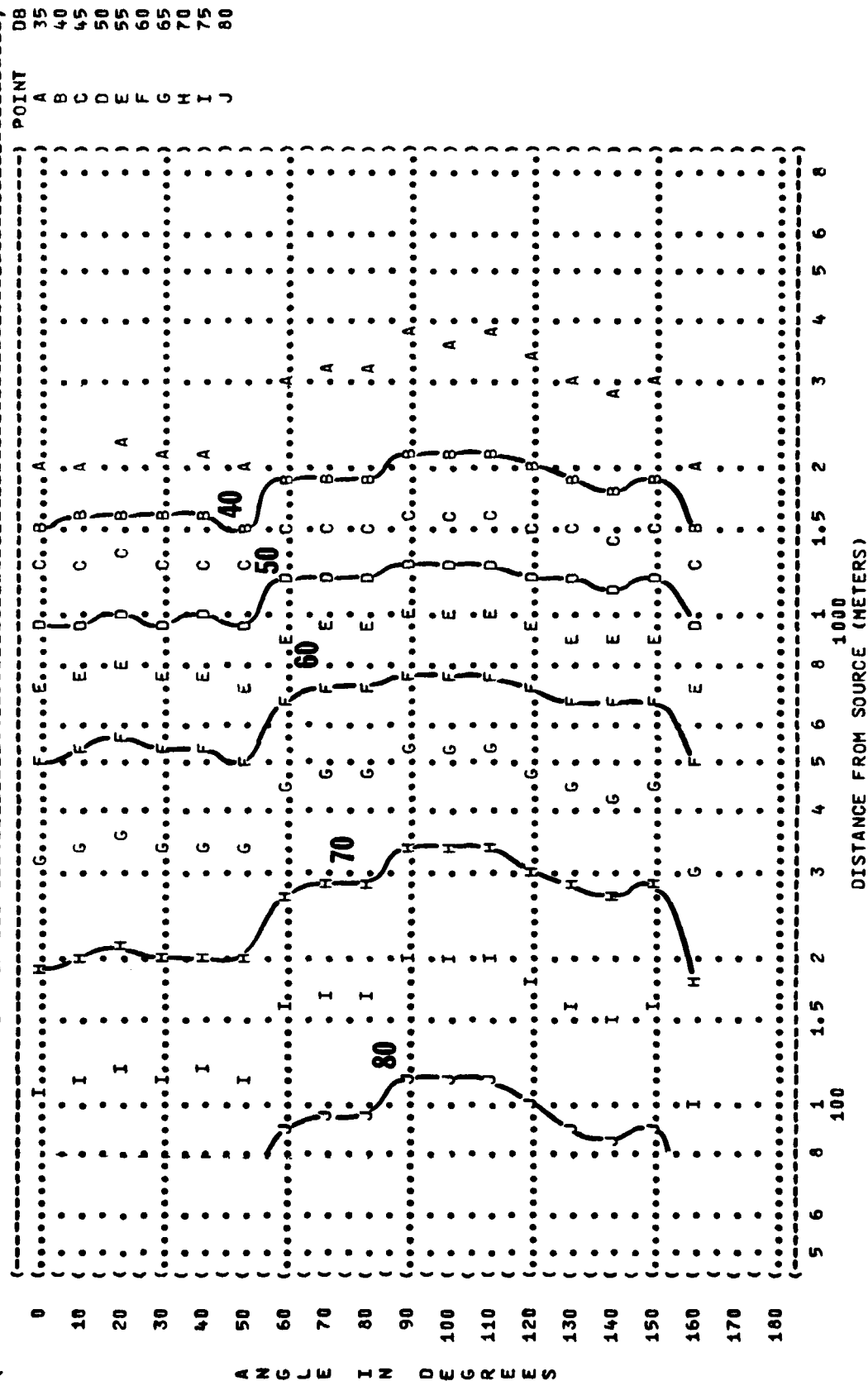
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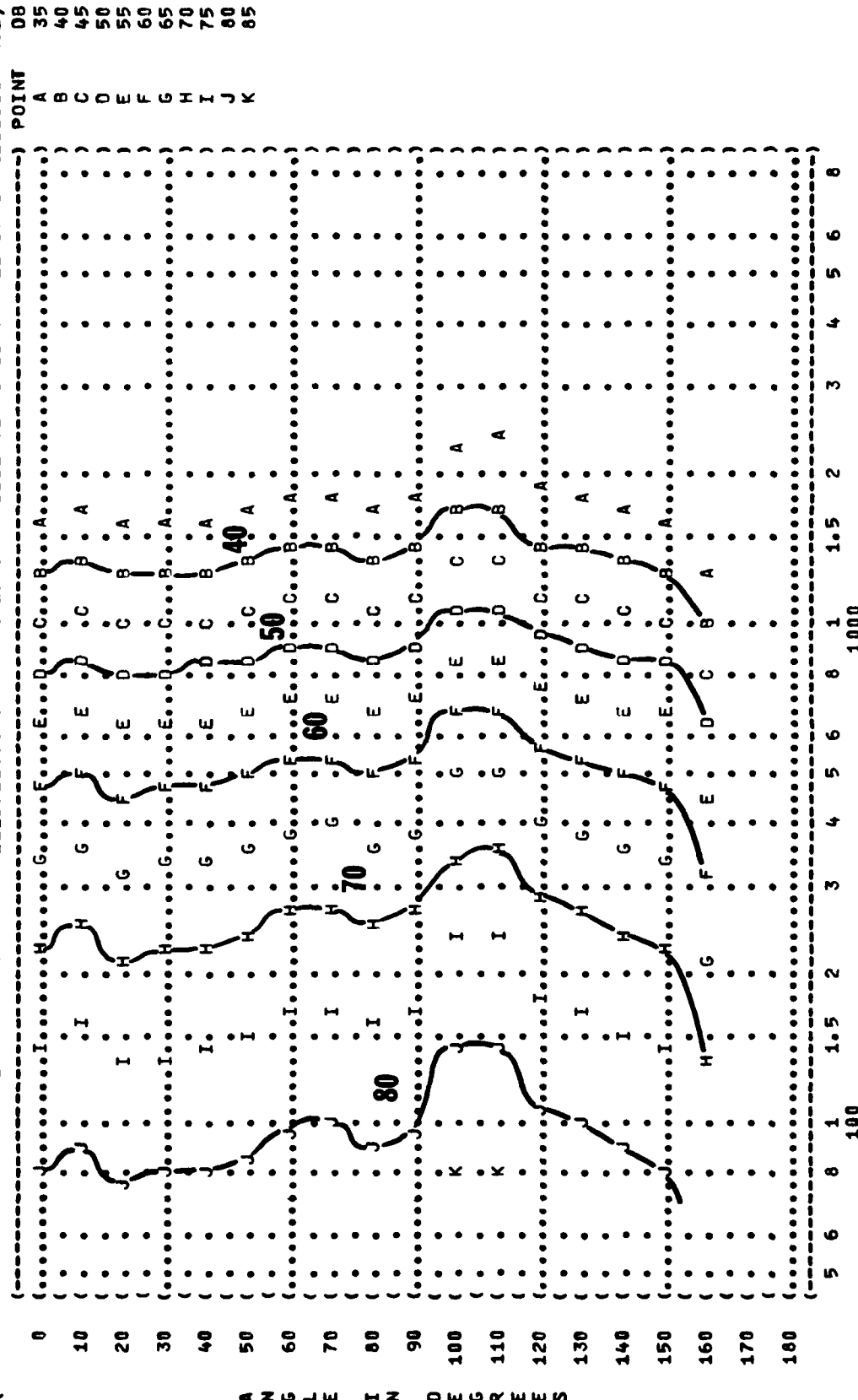
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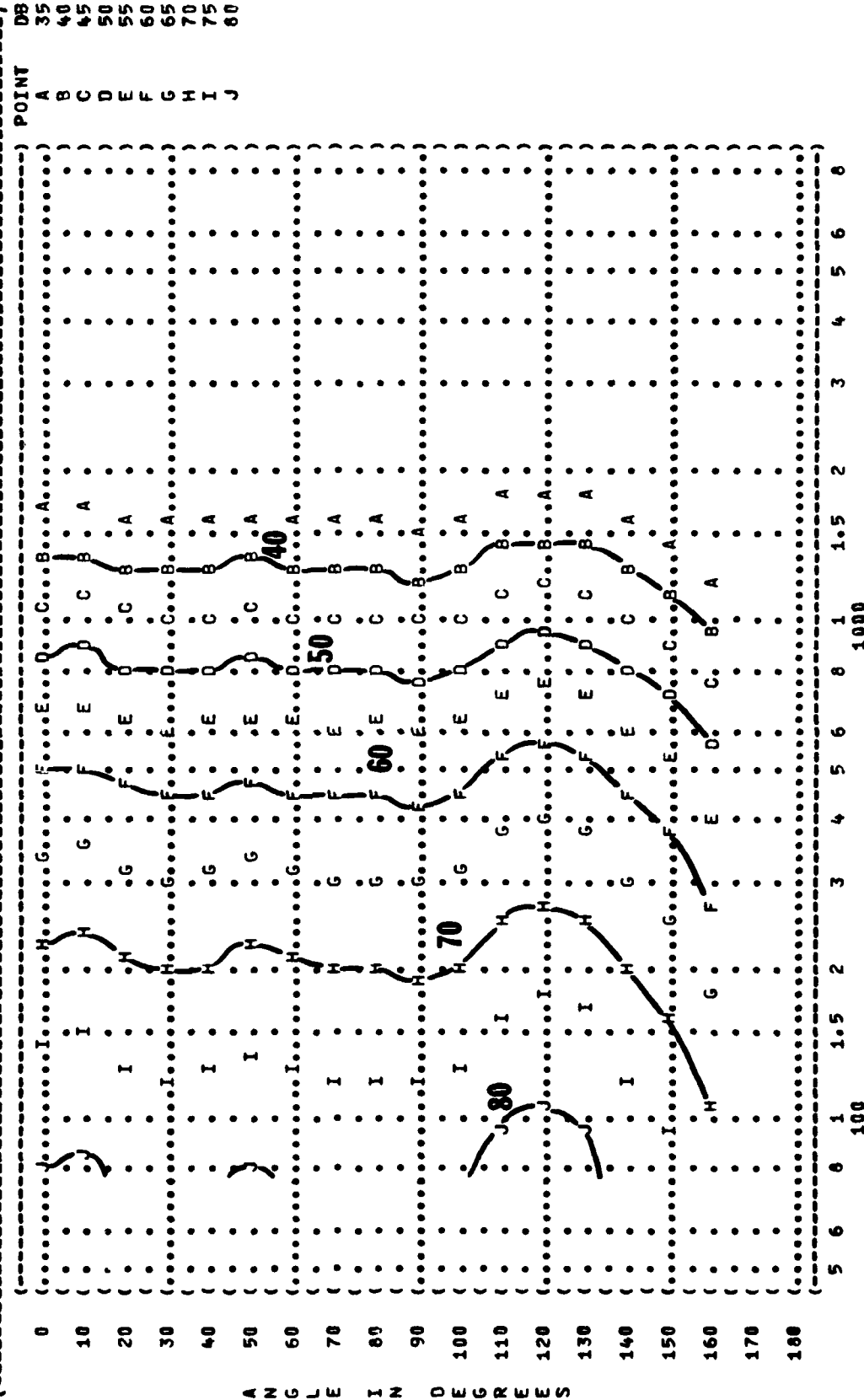
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(-----)
( FIGURE : SOUND PRESSURE LEVEL (SPL) ) IDENTIFICATION: )
( EQUAL LEVEL CONTOURS (DB) ) )
( 11 ) OMEGA 1.4 )
( 63 HZ OCTAVE BAND ) TEST AN-025-001 )
( NOISE SOURCE/SUBJECT: ) RUN 01 )
( OPERATION: ) METEOROLOGY: )
( IDLE POWER ) TEMP = 15 C )
( 58% RPM ) BAR PRESS = .760 M HG )
( ALL ENGINES ) REL HUMID = 70 % )
( FREE FLOW ) PAGE 19 )
(C-135B AIRCRAFT )
(TF33-P-5 )
(FAR FIELD NOISE )
```



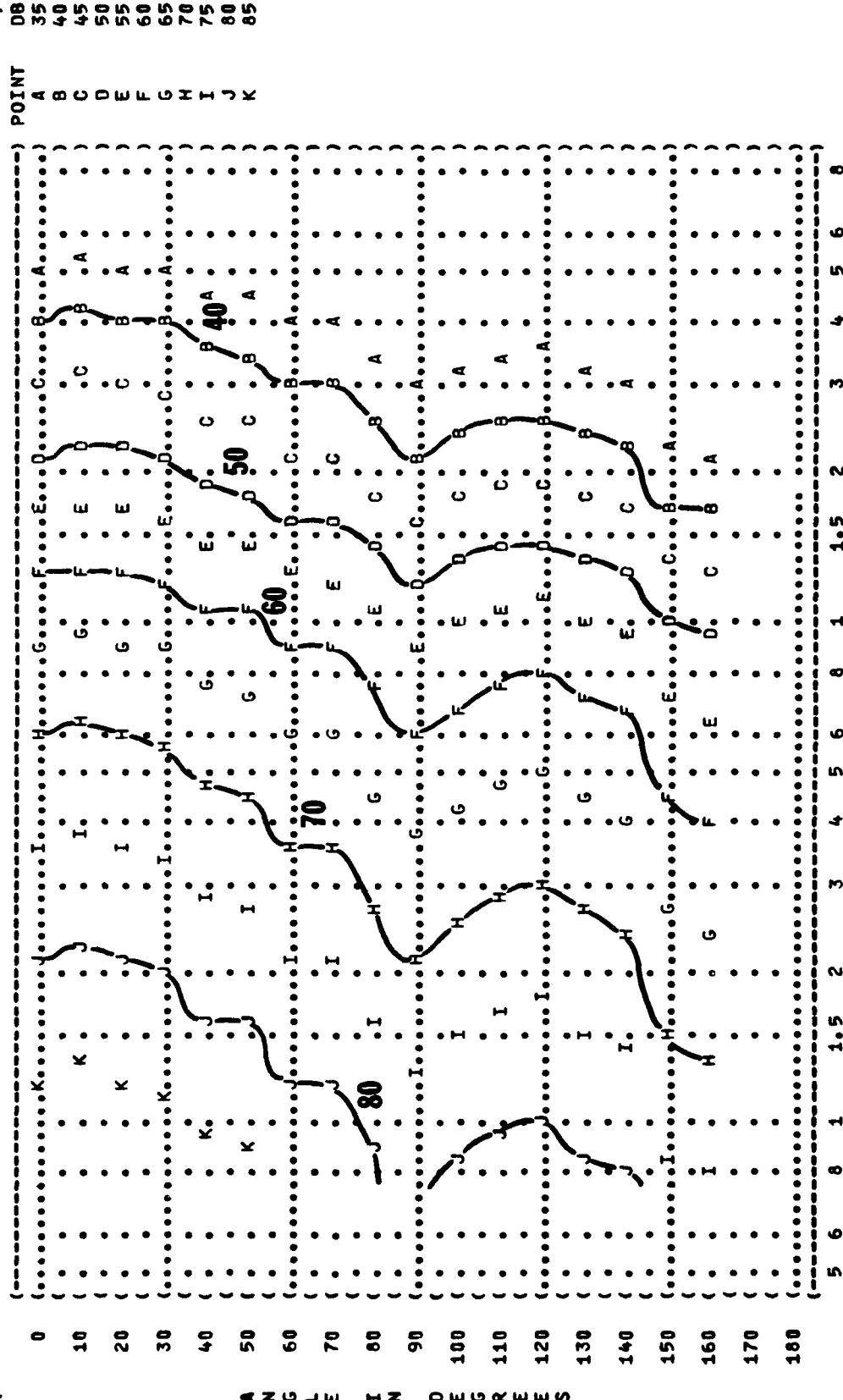
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 125 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION: (METEOROLOGY: (IDENTIFICATION: ()
 (C-135B AIRCRAFT (IDLE POWER (TEMP = 15 C (OMEGA 1.4
 (TF33-P-5 (58% RPM (BAR PRESS = .760 M HG (TEST AN-025-001
 (FAR FIELD NOISE (ALL ENGINES (REL HUMID = 70 % (RUN 01
 (FREE FLOW () 22 MAR 79 ()
 () () () PAGE 20 ()



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATIONS:
 ((IDLE POWER
 ((58% RPM
 ((ALL ENGINES
 ((FAR FIELD NOISE
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 21
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AN-025-001
 (RUN 01
 (22 MAR 79
 ()

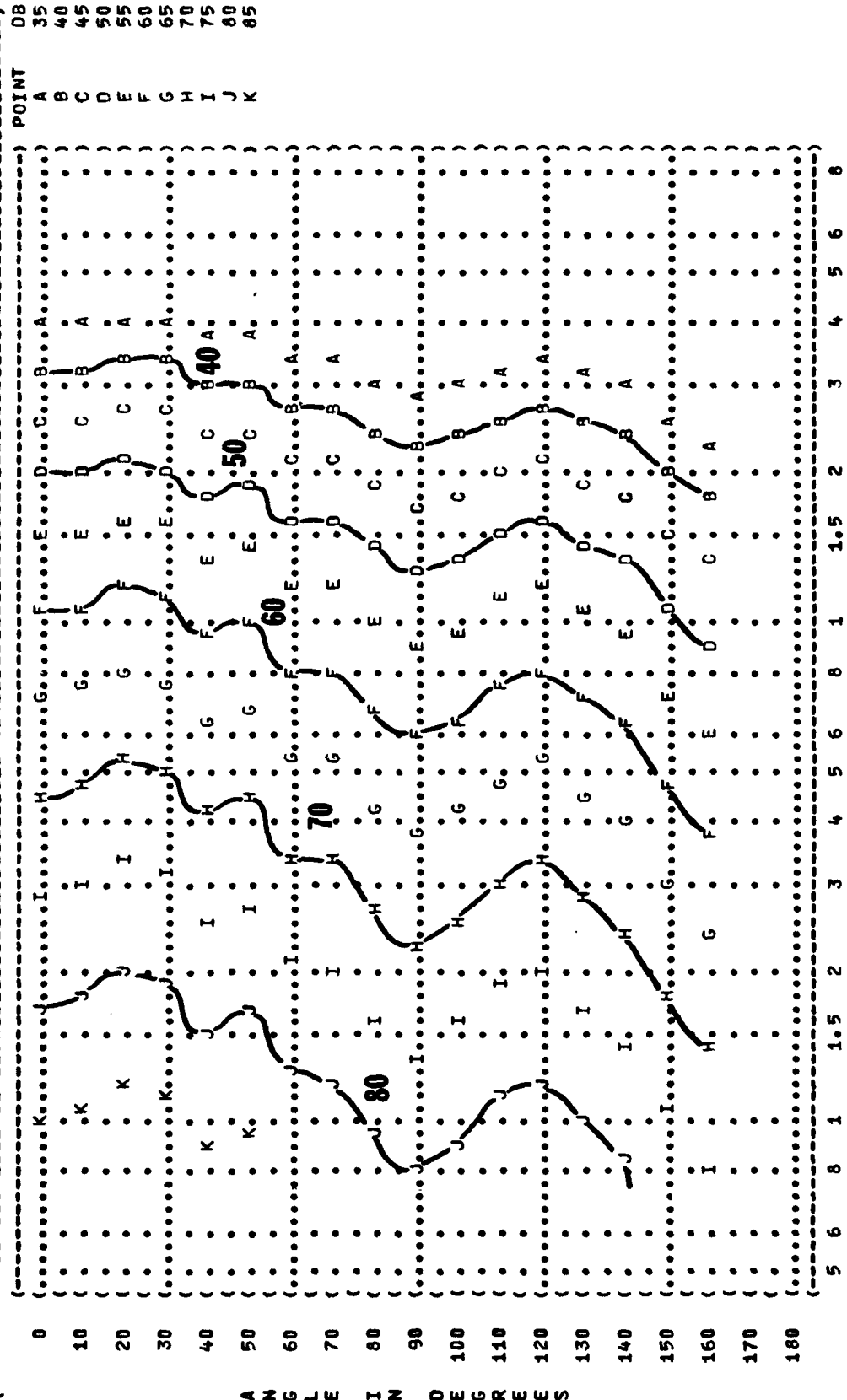


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 500 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-135B AIRCRAFT (IDLE POWER
 (TF33-P-5 (58% RPM
 (FAR FIELD NOISE (ALL ENGINES
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 22
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AN-025-001
 (RUN 01



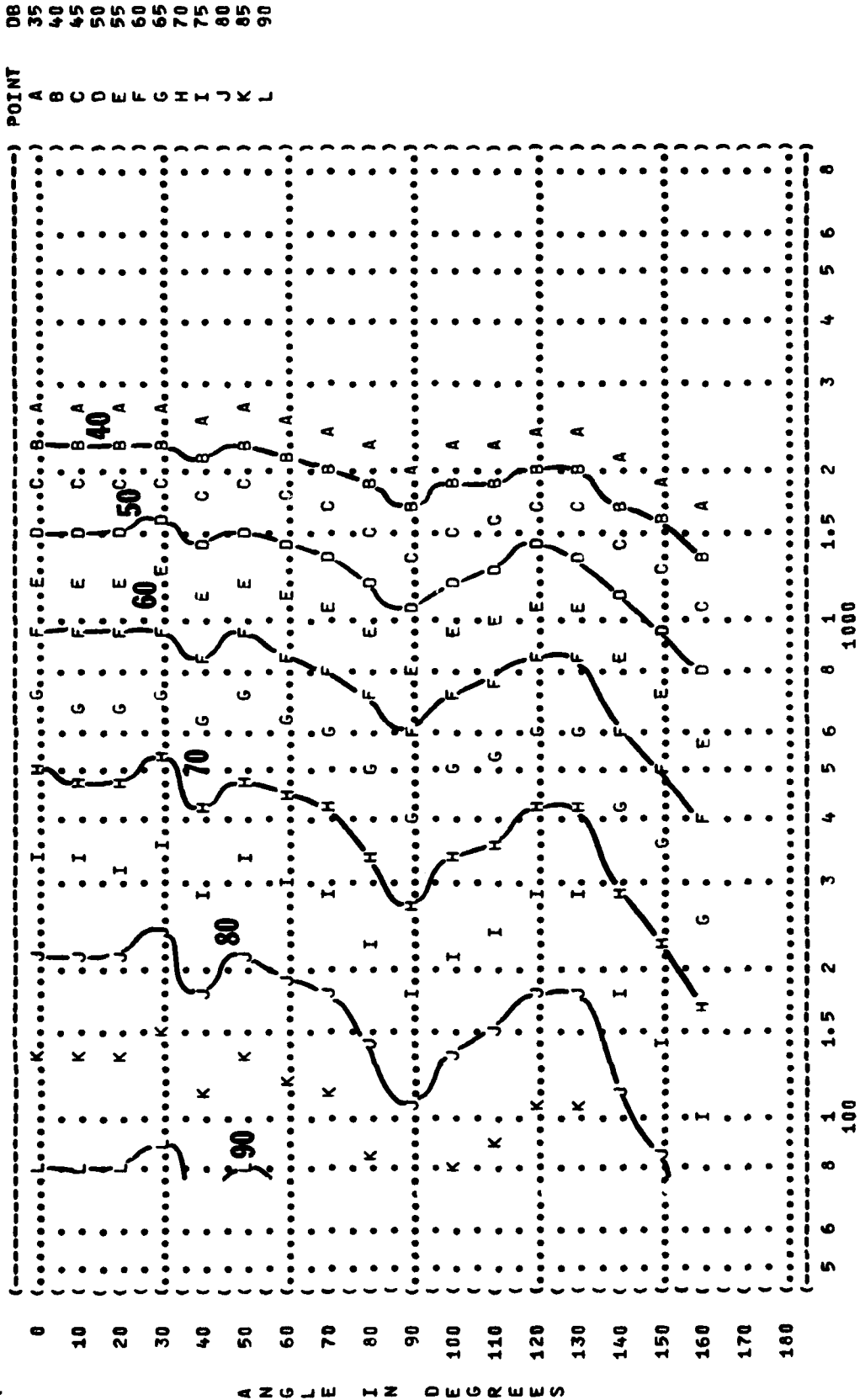
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 L E
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 D E
 G R
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 S

(FIGURE: SOUND PRESSURE LEVEL (SPL)
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 (TF33-P-5 (ALL ENGINES
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY:
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 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AN-025-001
 (RUN 01
 (22 MAR 79
 (PAGE 23



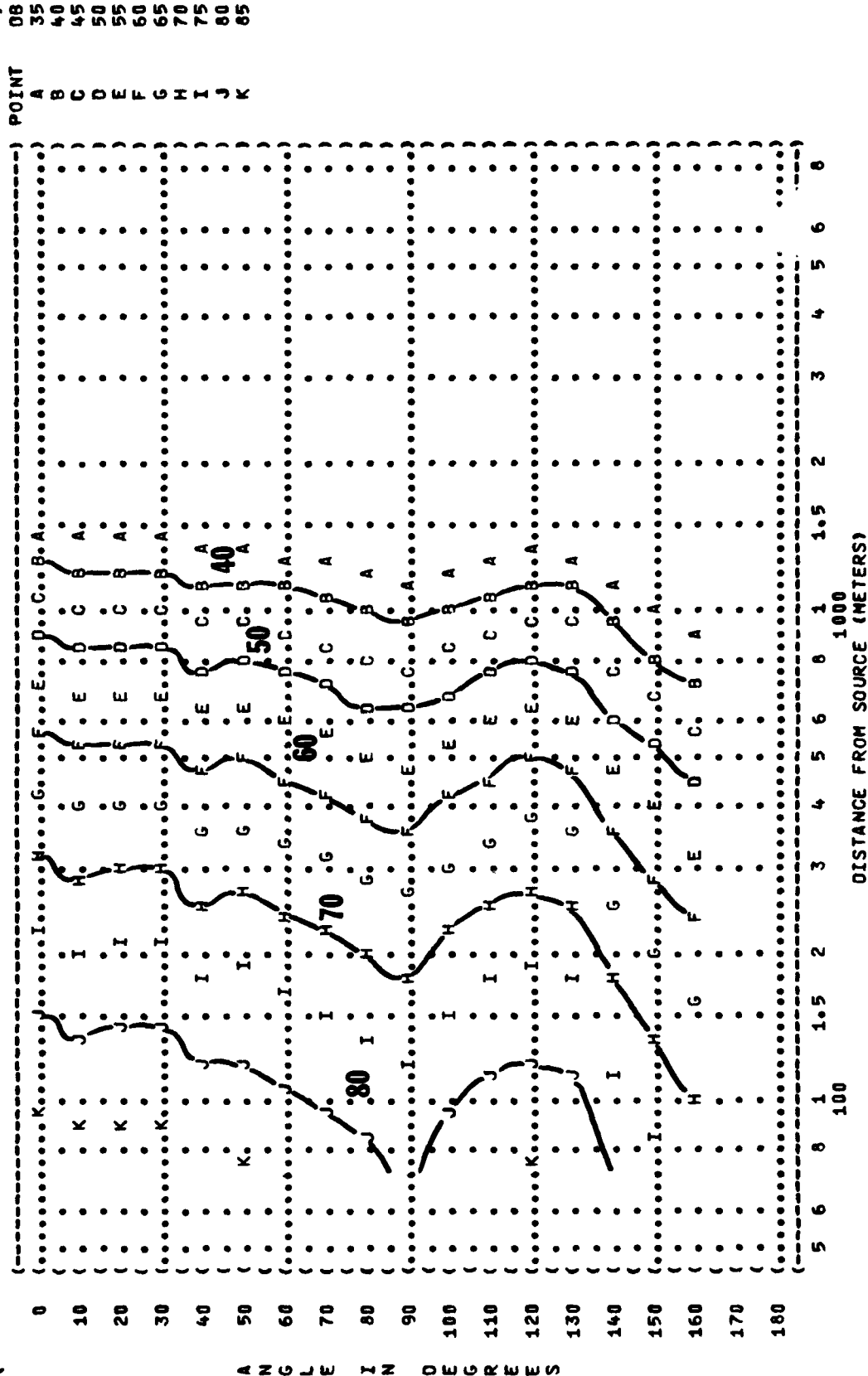
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 I N
 D E G R E E S

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 (TF33-P-5 (58% RPM
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 (FREE FLOW
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 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
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 (TEST AN-025-001
 (RUN 01
 (22 MAR 79
 (PAGE 24

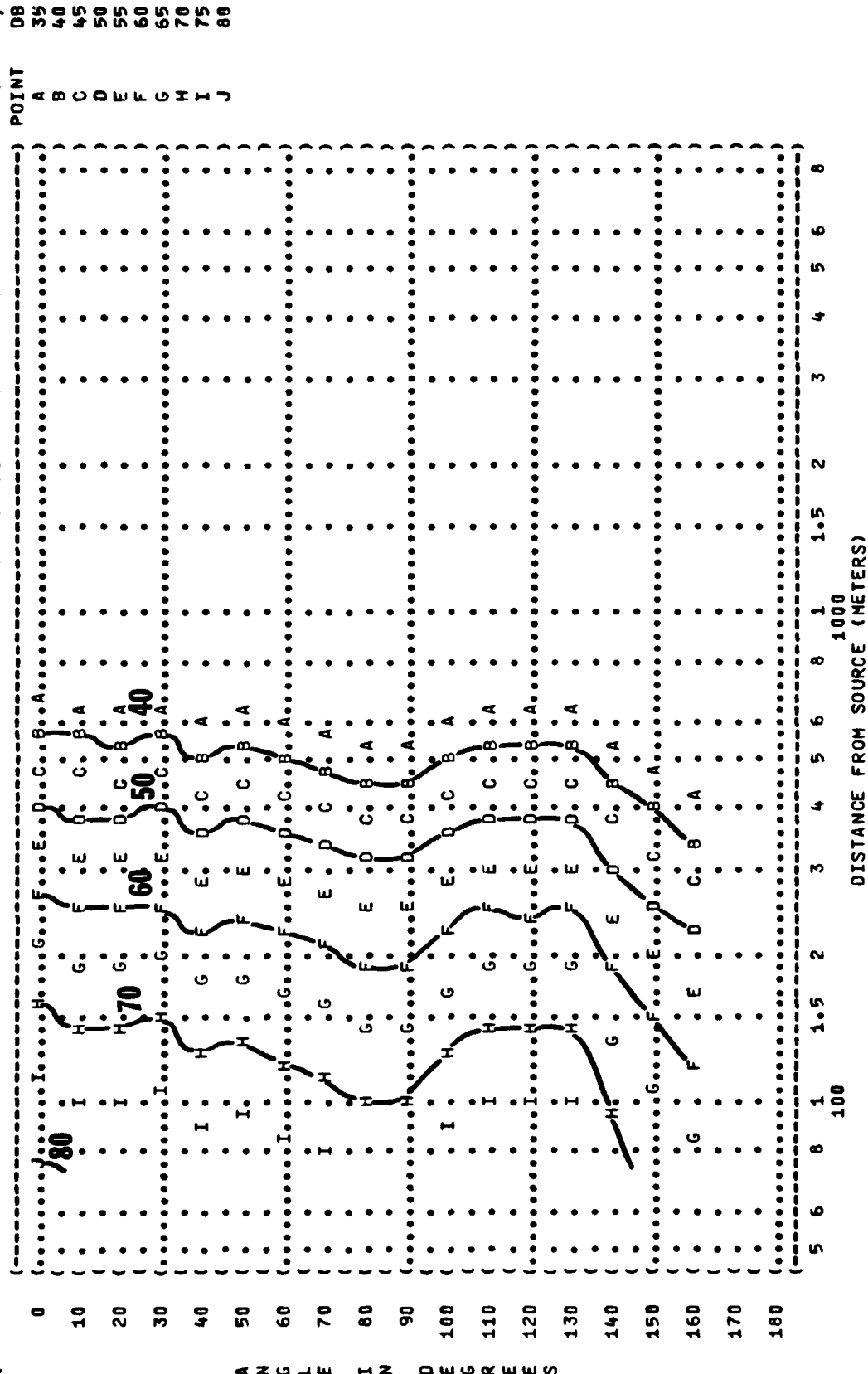


DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
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 ((IDLE POWER
 ((58% RPM
 (C-135B AIRCRAFT (ALL ENGINES
 (TF33-P-5 (FREE FLOW
 (FAR FIELD NOISE ()
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () PAGE 25
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST AN-025-001
 () RUN 01
 () 22 MAR 79
 ()



```
( ( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( ( EQUAL LEVEL CONTOURS (DB) ) )
( ( 8000 HZ OCTAVE BAND ) )
( ( 11 ) OMEGA 1.4 )
( ( ) )
( ( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) TEST AN-025-001 )
( ( OPERATION: ) ) ) RUN 01 )
( ( IDLE POWER ) TEMP = 15 C ) )
( ( 58% RPM ) BAR PRESS = .760 M HG ) )
( ( ALL ENGINES ) REL HUMID = 70 % ) )
( ( FREE FLOW ) ) ) PAGE 26 )
```



PAGE 19

11 63 HZ OCTAVE BAND

FREE

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WS

.....

FREE FLOW

FAR FIELD NOISE

כ

5 6 8 1 1.5 2 3 4 5 6 8
100 1000

DISTANCE FROM SOURCE (METERS)

```

FIGURE: SOUND PRESSURE LEVEL {SFL}
          EQUAL LEVEL CONTOURS (DB)
          11
          500 HZ OCTAVE BAND
          ) IDENTIFICATION:
          )
          ) OMEGA 1.4

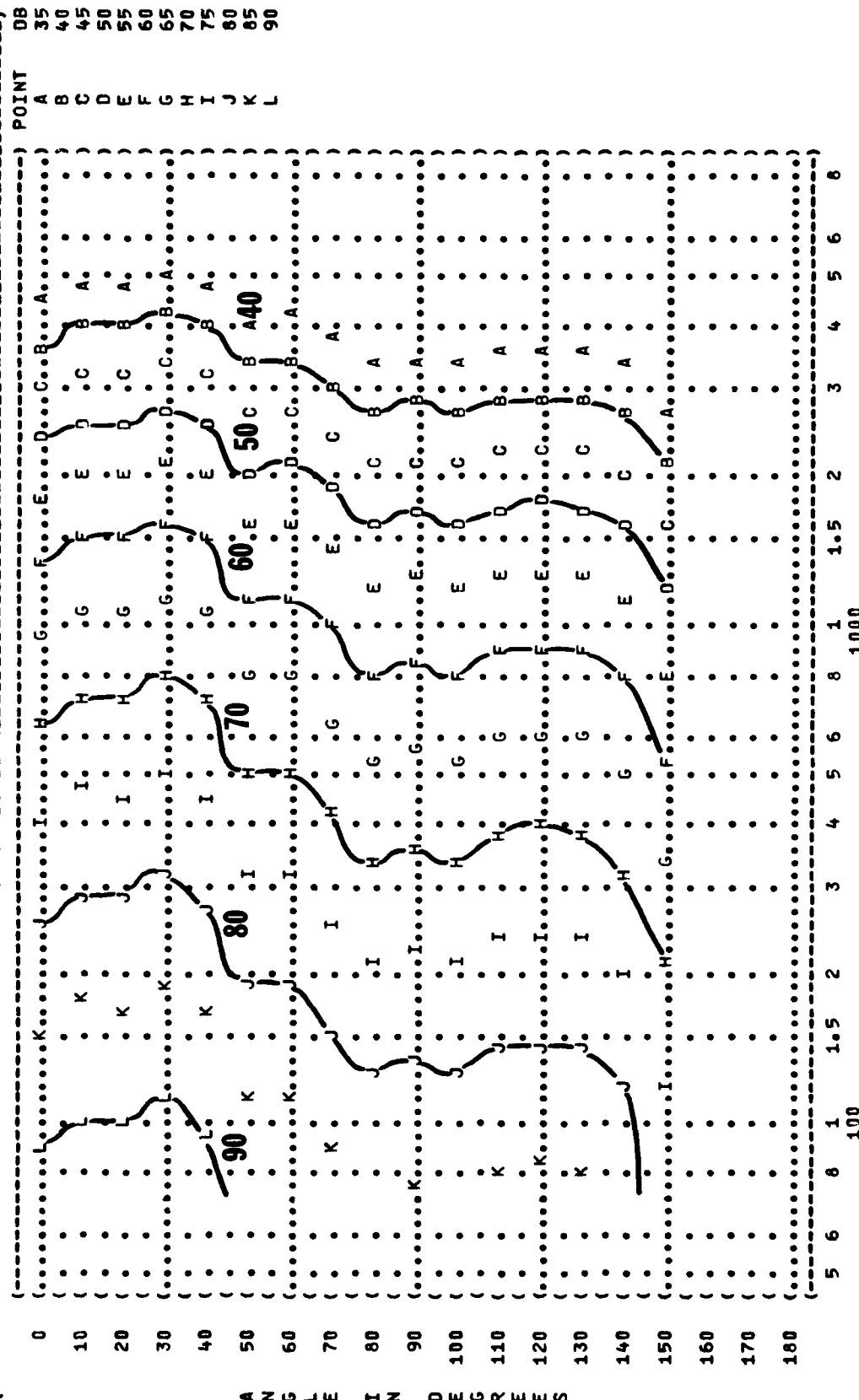
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NOISE SOURCE/SUBJECT:	(OPERATION:)	METEOROLOGY:)	RUN	02
	()	TEMP)		
C-135B AIRCRAFT	(70% RPM, ENGINE NO. 2)	BAR PRESS =)	22	MAR 79
TF33-P-5	(OTHER ENGINES IDLE)	REL HUMID =)		
FAR FIELD NOISE	(FREE FLOW))	PAGE	22

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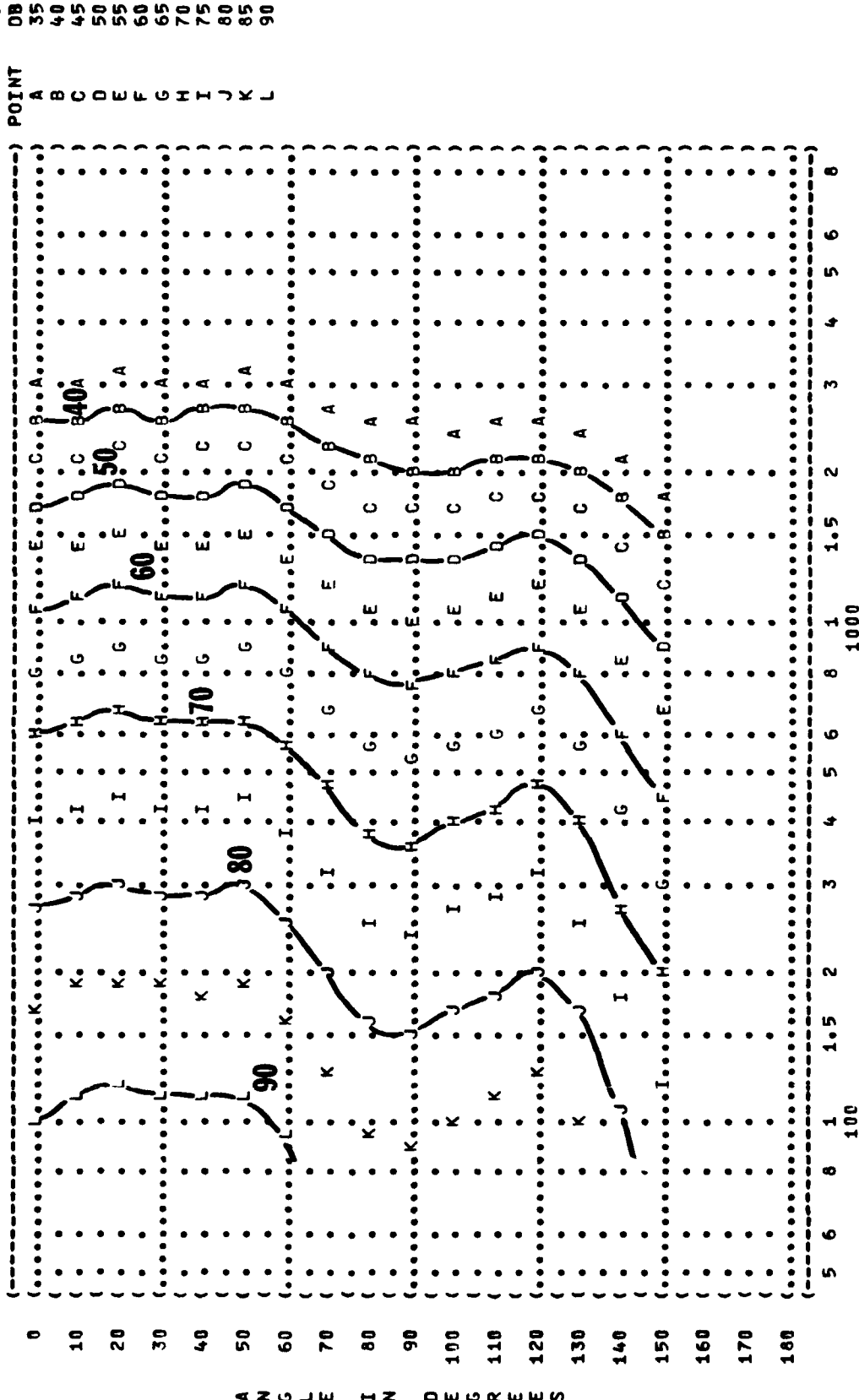
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 (TF33-P-5 (OTHER ENGINES IDLE
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 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
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 (TEST AN-025-001
 (RUN 02
 (22 MAR 79
 (PAGE 23



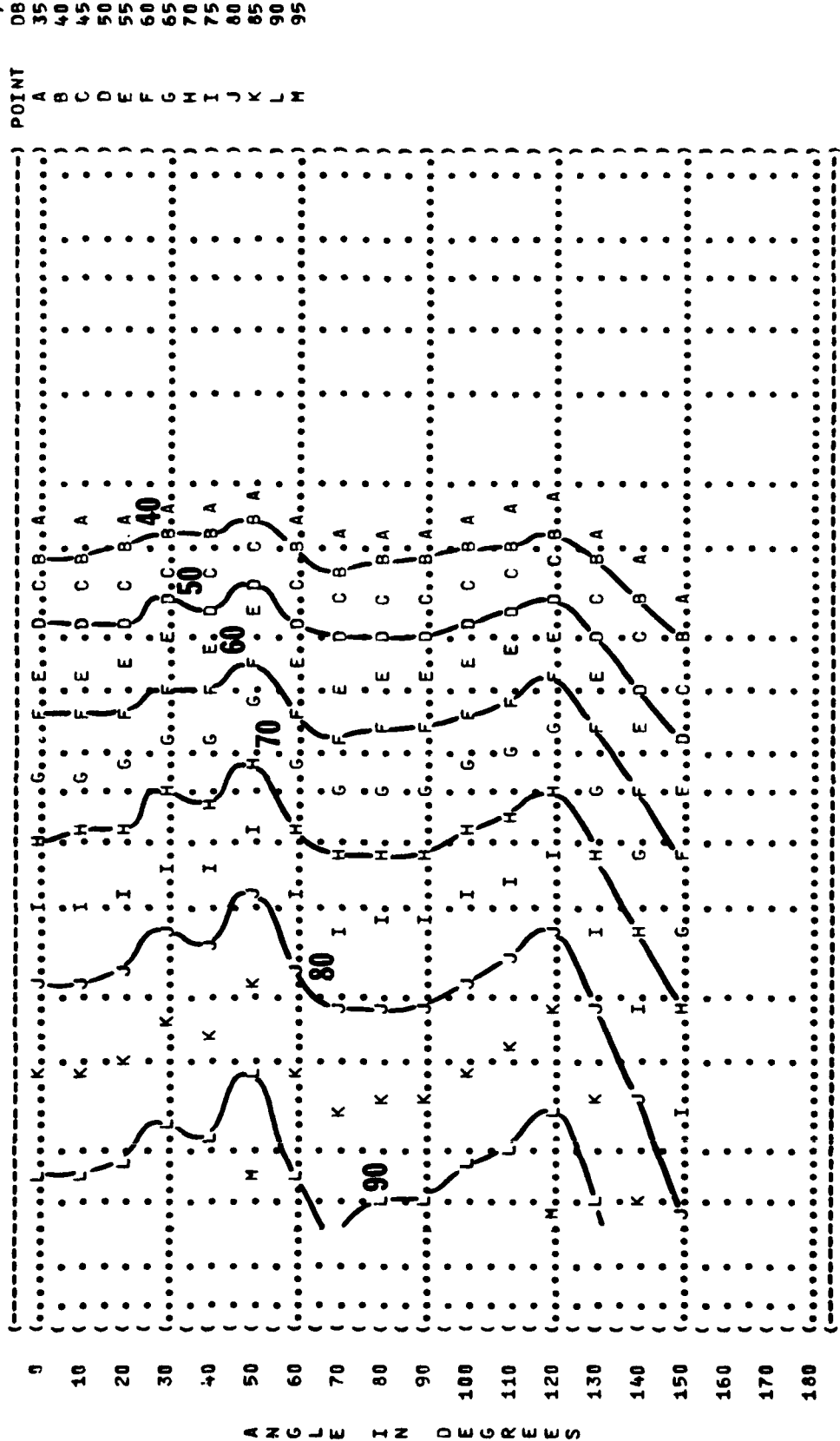
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 (TEST AN-025-001
 (RUN 02
 (22 MAR 79
 (PAGE 24



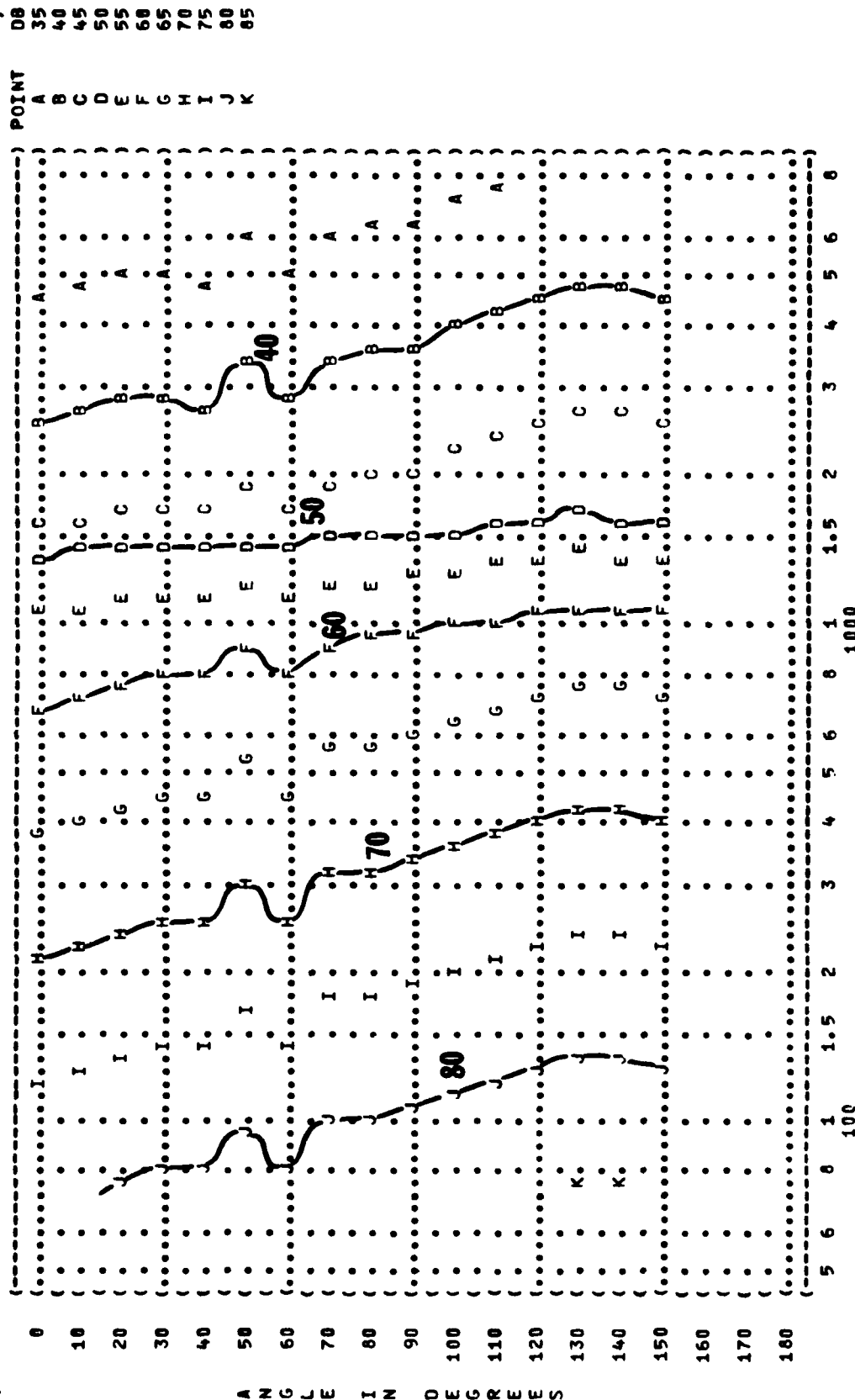
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 (FAR FIELD NOISE (FREE FLOW
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 (BAP PRESS = .760 M HG
 (REL HUMID = 70 %
 (RUN 02
 (22 MAR 79
 (PAGE 25
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 (TEST AN-025-001

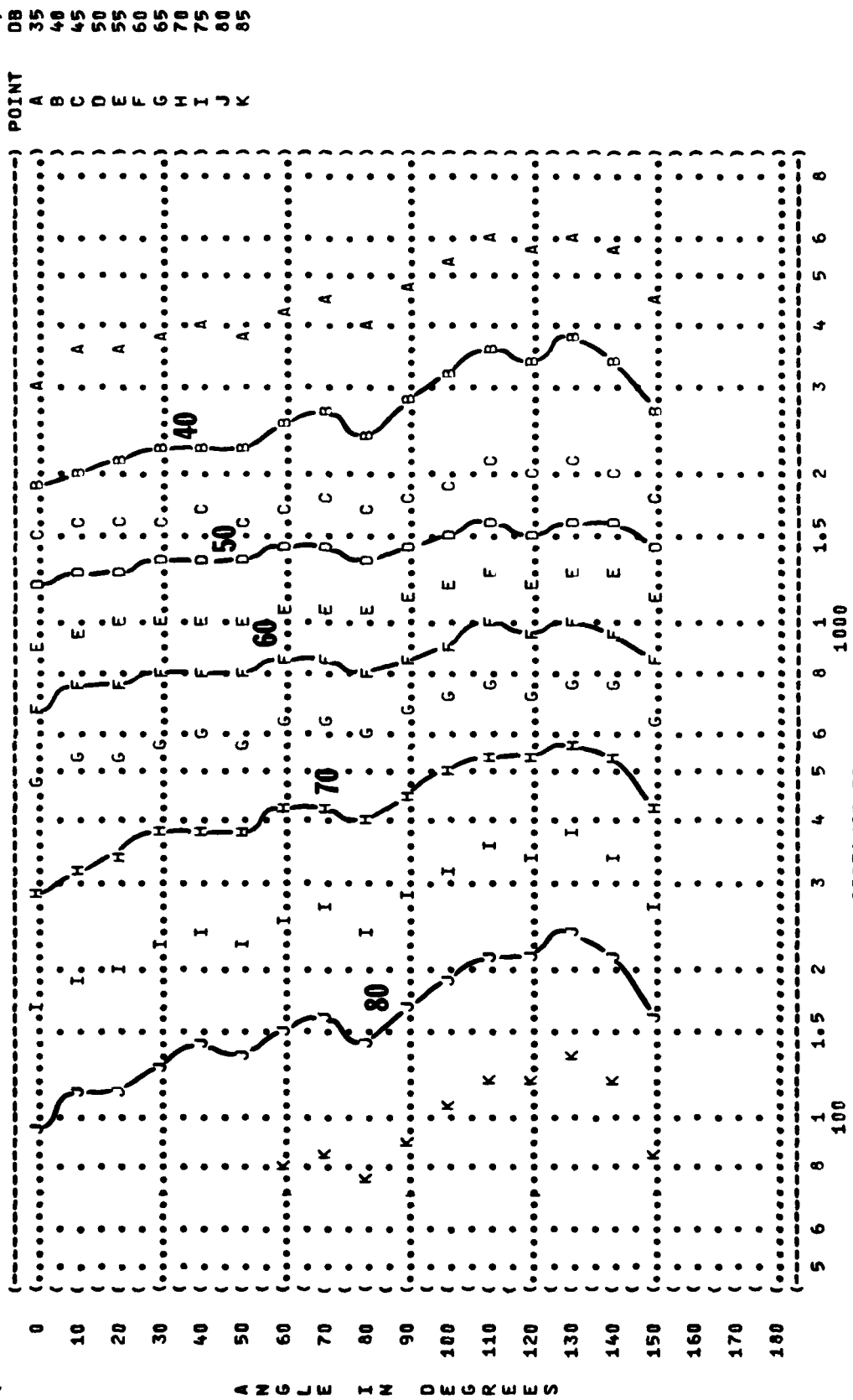


DISTANCE FROM SOURCE (METERS)

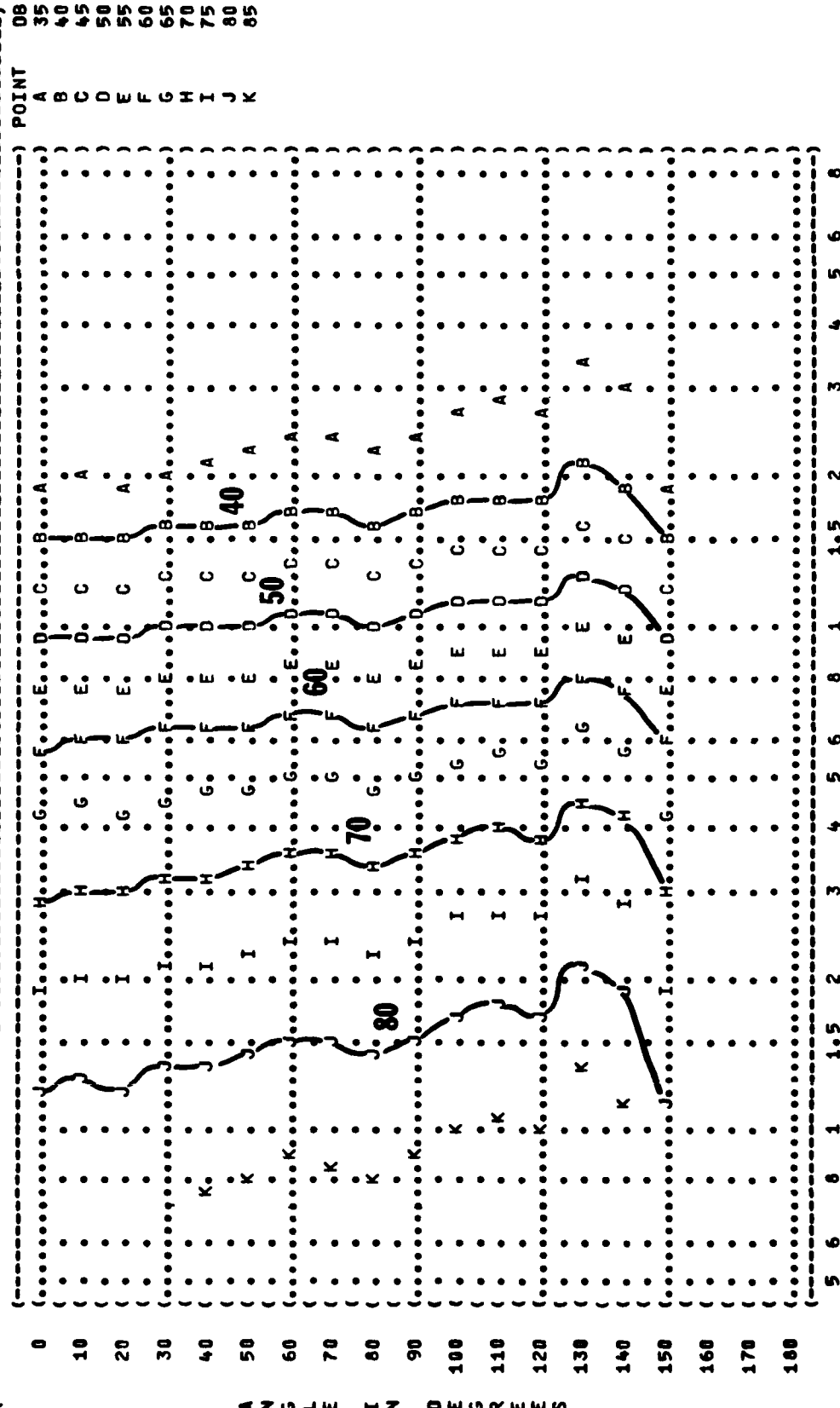
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 (BAR PRESS = .760 M HG
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 (TEST AN-025-001
 (RUN 03
 (22 MAR 79
 (PAGE 18



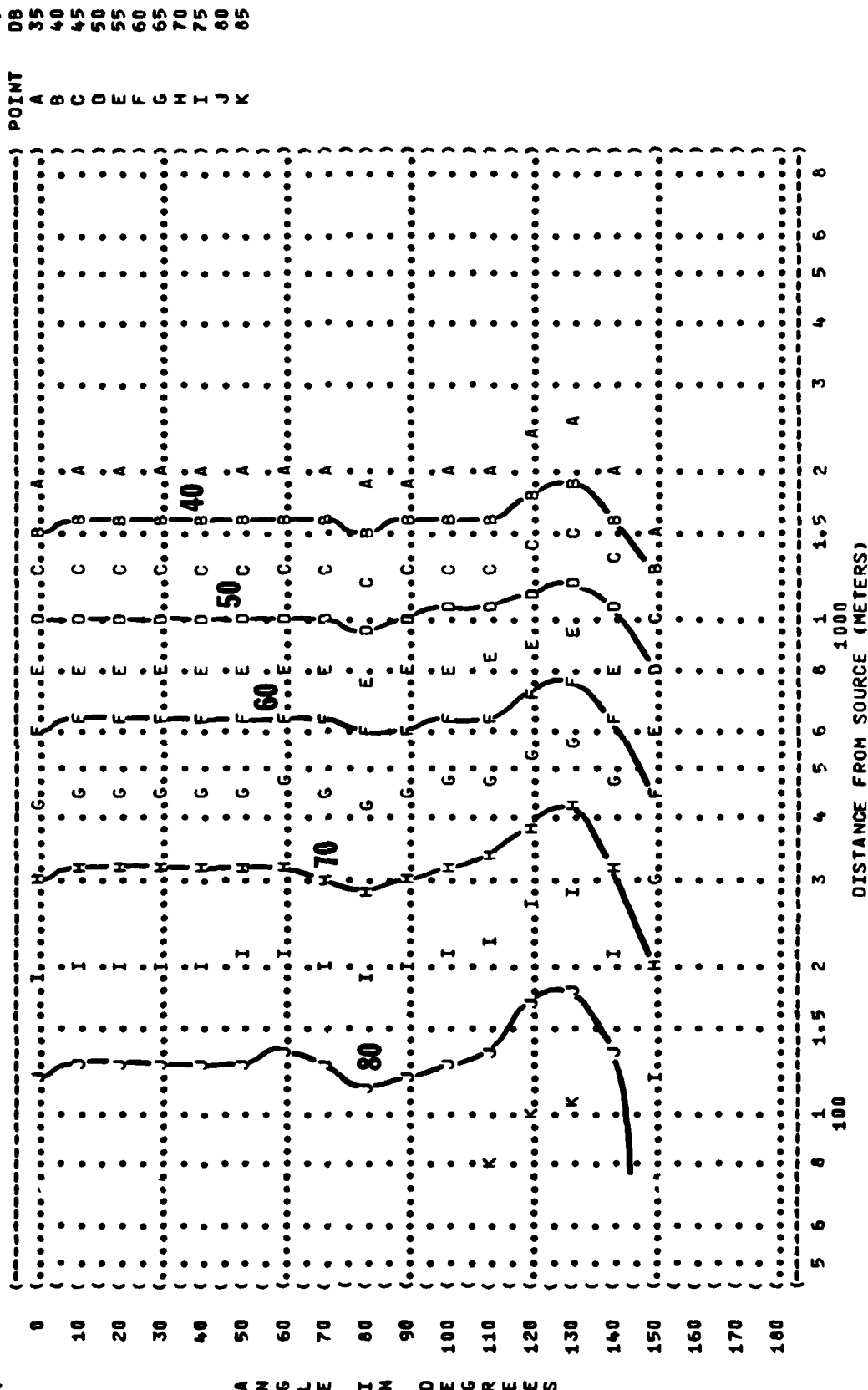
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 (RUN 03
 (22 MAR 79
 (PAGE 19



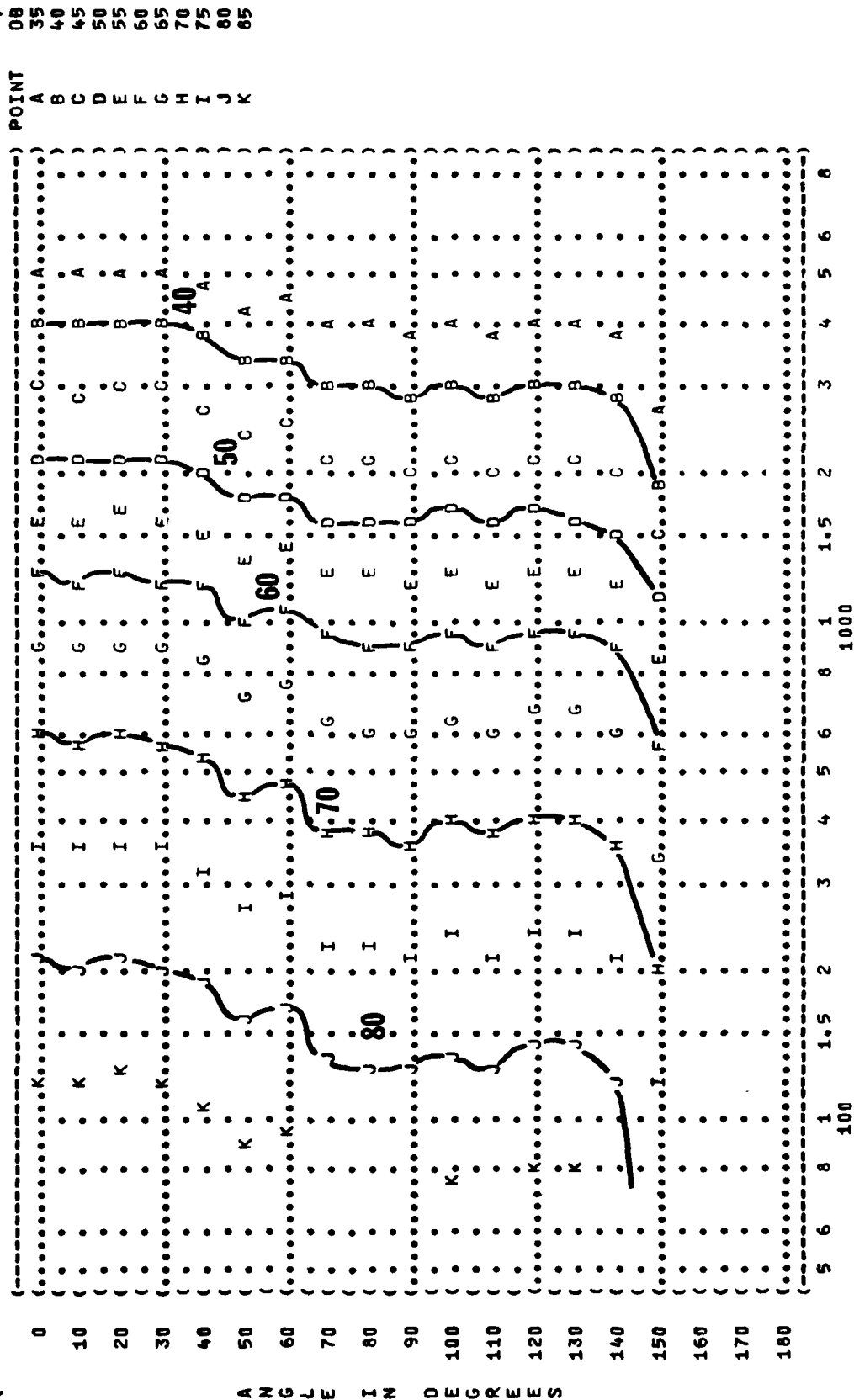
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 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST AN-025-001)
 (RUN 03)
 (22 MAR 79)
 (PAGE 20)



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-135B AIRCRAFT (80% RPM, ENGINE NO. 2
 (TF33-P-5 (OTHER ENGINES IDLE
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 H MG
 (REL HUMID = 70 %
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 (TEST AN-025-001
 (RUN 03
 (22 MAR 79
 (PAGE 21

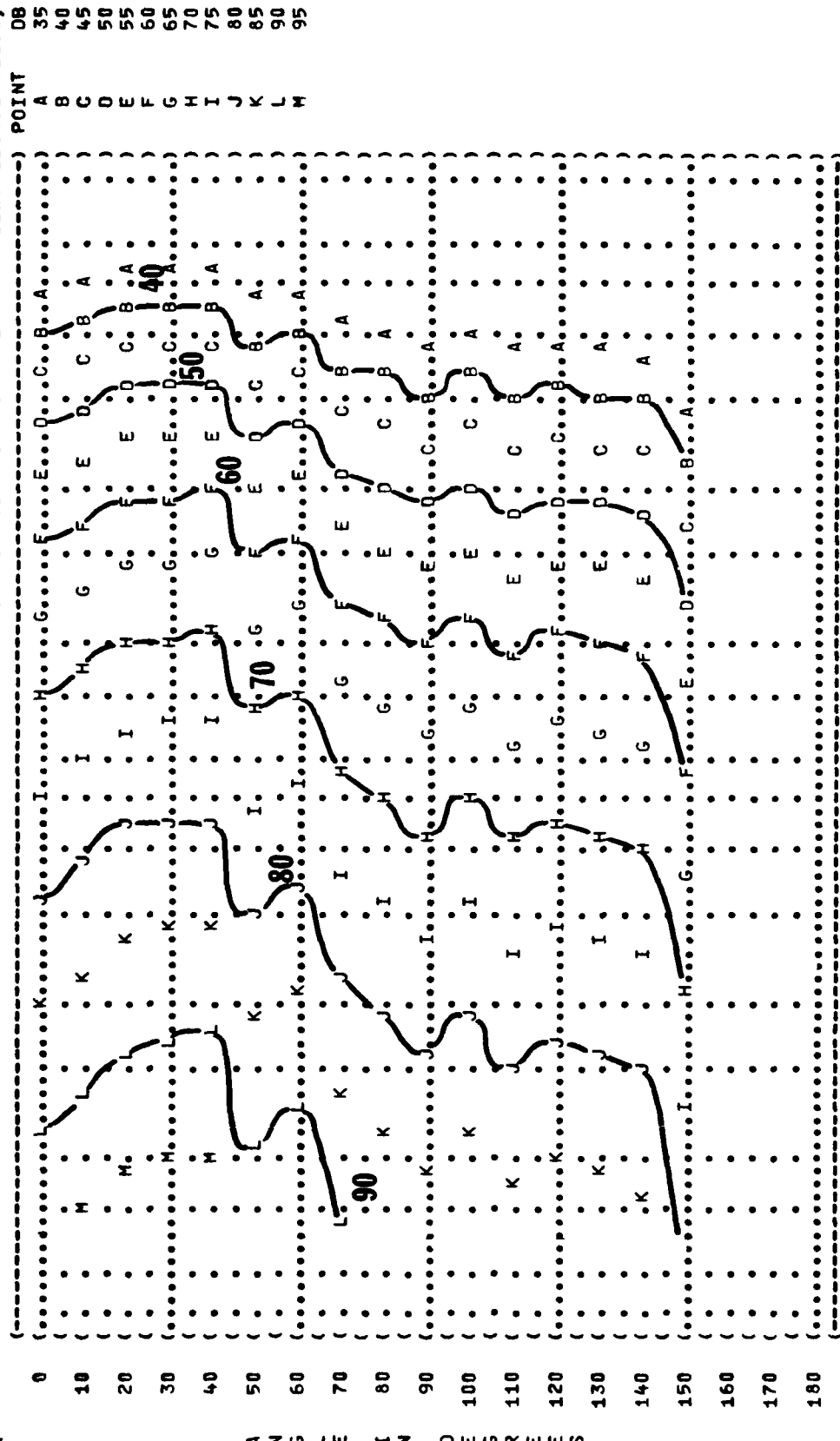


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 (EQUAL LEVEL CONTOURS (DB))
 (11 500 HZ OCTAVE BAND)
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 (80% RPM, ENGINE NO. 2)
 (TF33-P-5)
 (OTHER ENGINES IDLE)
 (FAR FIELD NOISE)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 ()
 (OMEGA 1.4)
 (TEST AN-025-001)
 (RUN 03)
 (22 MAR 79)
 (PAGE 22)



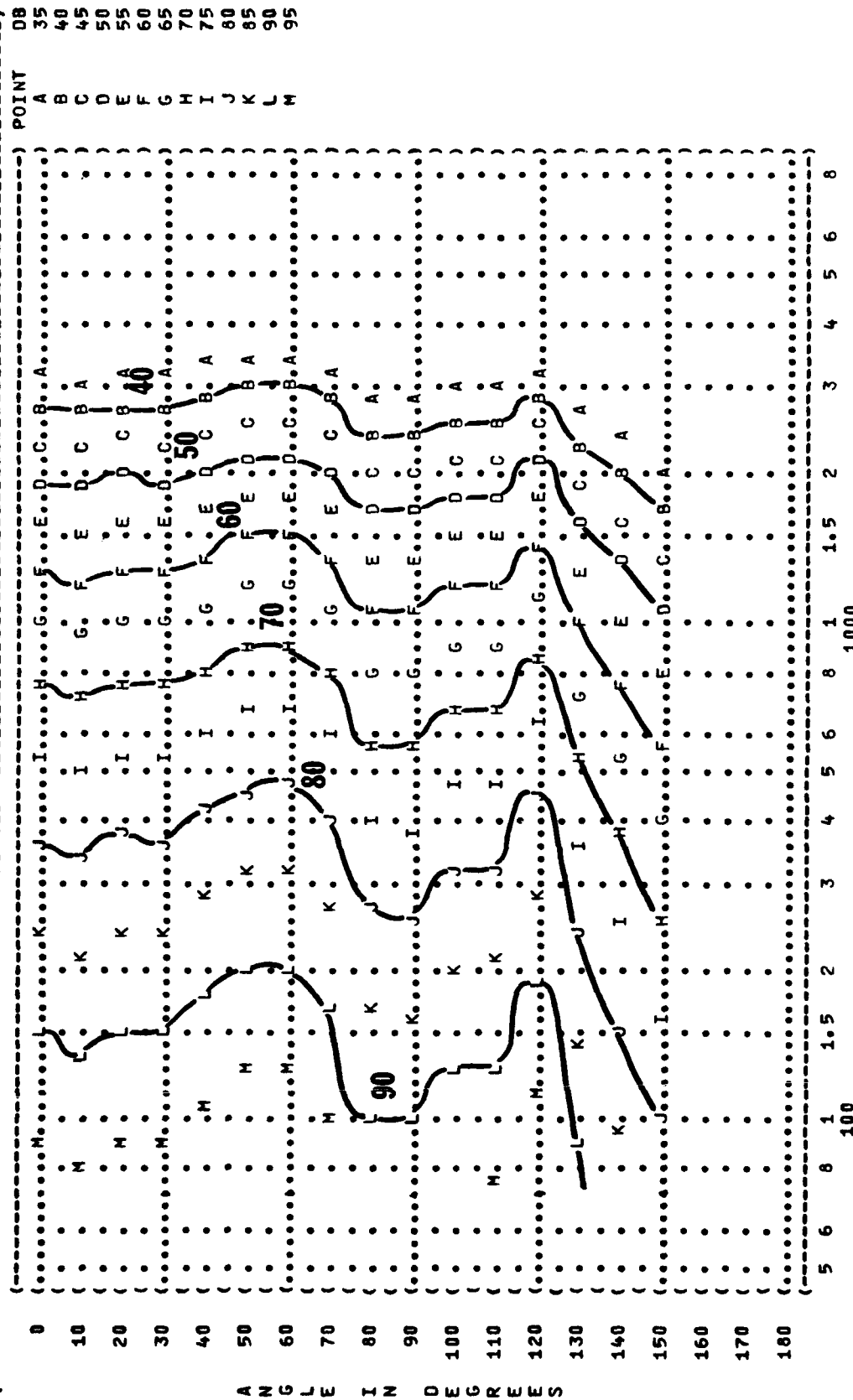
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 (TF33-P-5)) BAR PRESS = .760 M HG)
 (FAR FIELD NOISE)) OTHER ENGINES IDLE)
 ()) REL HUMID = 70 %)
 ()) FREE FLOW)
 ()) PAGE 23)



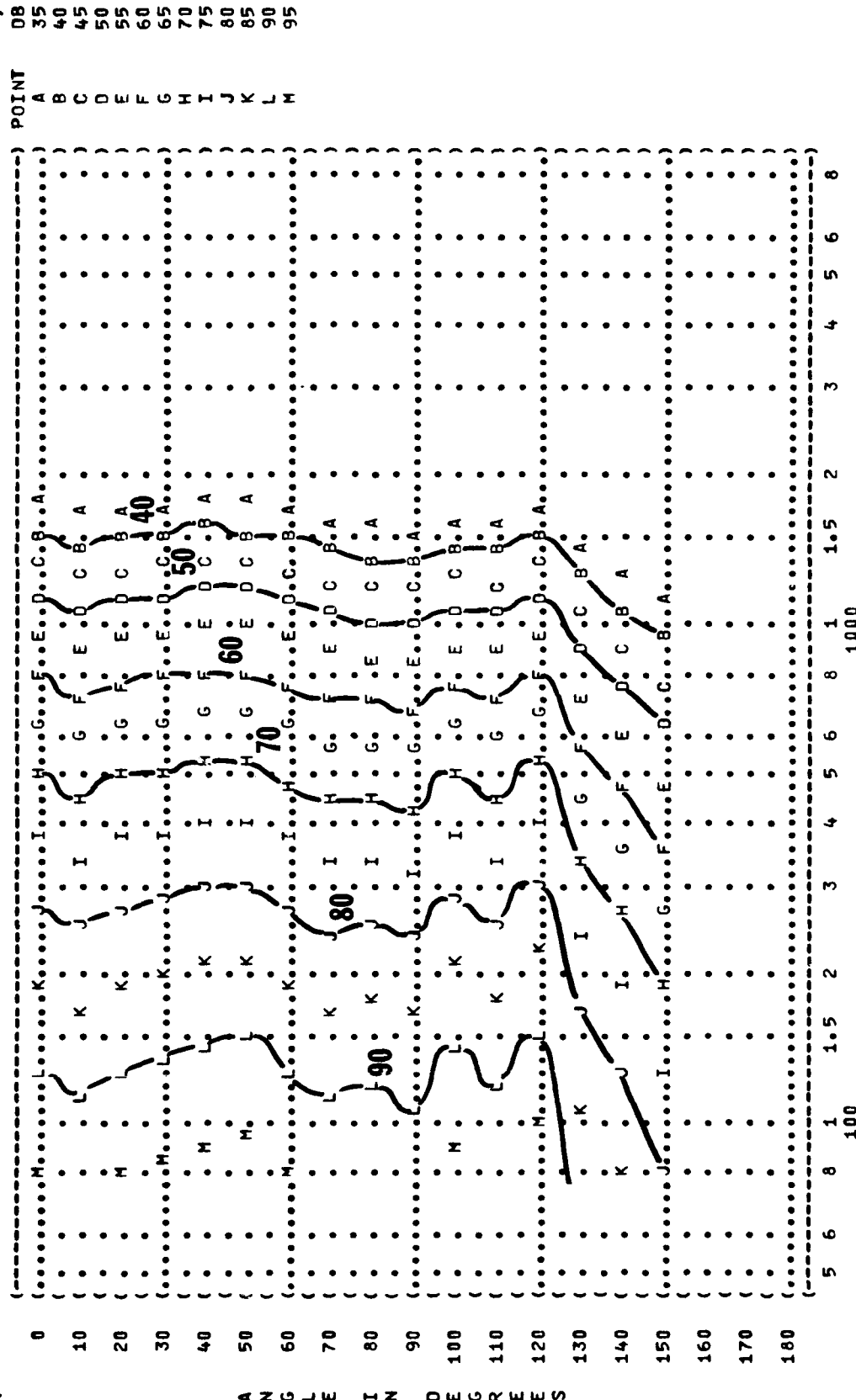
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 (TF33-P-5 (OTHER ENGINES IDLE (BAR PRESS = .760 M HG
 (FAR FIELD NOISE (FREE FLOW (REL HUMID = 70 %
 (((((PAGE 24
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AN-025-001
 (RUN 03

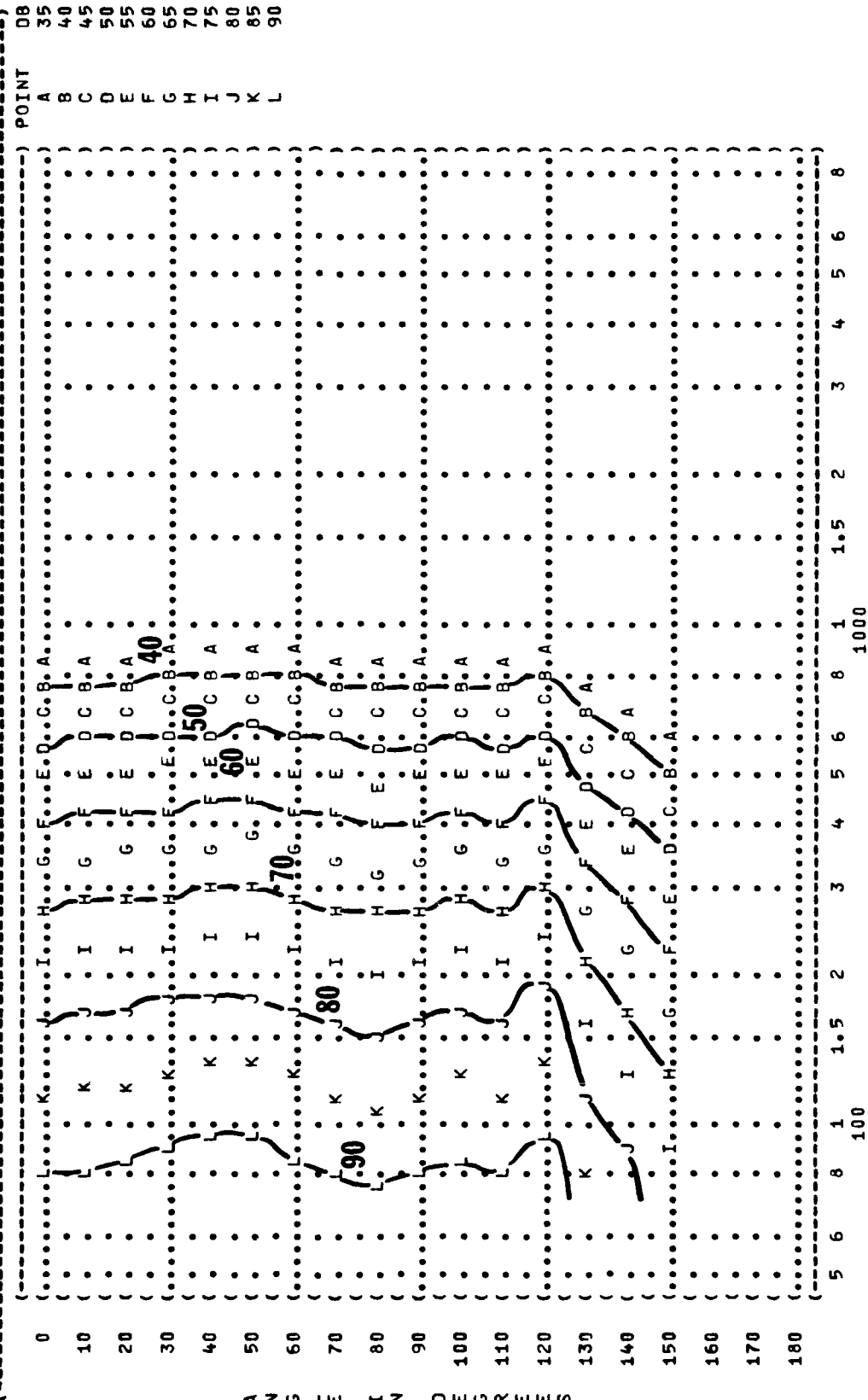


A N G L E I N D E G R E E S

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(-----)
( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( EQUAL LEVEL CONTOURS (DB) ) )
( 11 ) OMEGA 1.4 )
( 4000 HZ OCTAVE BAND ) TEST AN-025-001 )
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) RUN 03 )
( ) TEMP = 15 C )
( ) BAR PRESS = .760 M HG )
( C-135B AIRCRAFT ) 80% RPM, ENGINE NO. 2 ) 22 MAR 79 )
( TF33-P-5 ) OTHER ENGINES IDLE ) )
( FAR FIELD NOISE ) FREE FLOW ) PAGE 25 )
(-----)
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DISTANCE FROM SOURCE (METERS)

[illegible]

DISTANCE FROM SOURCE (METERS)

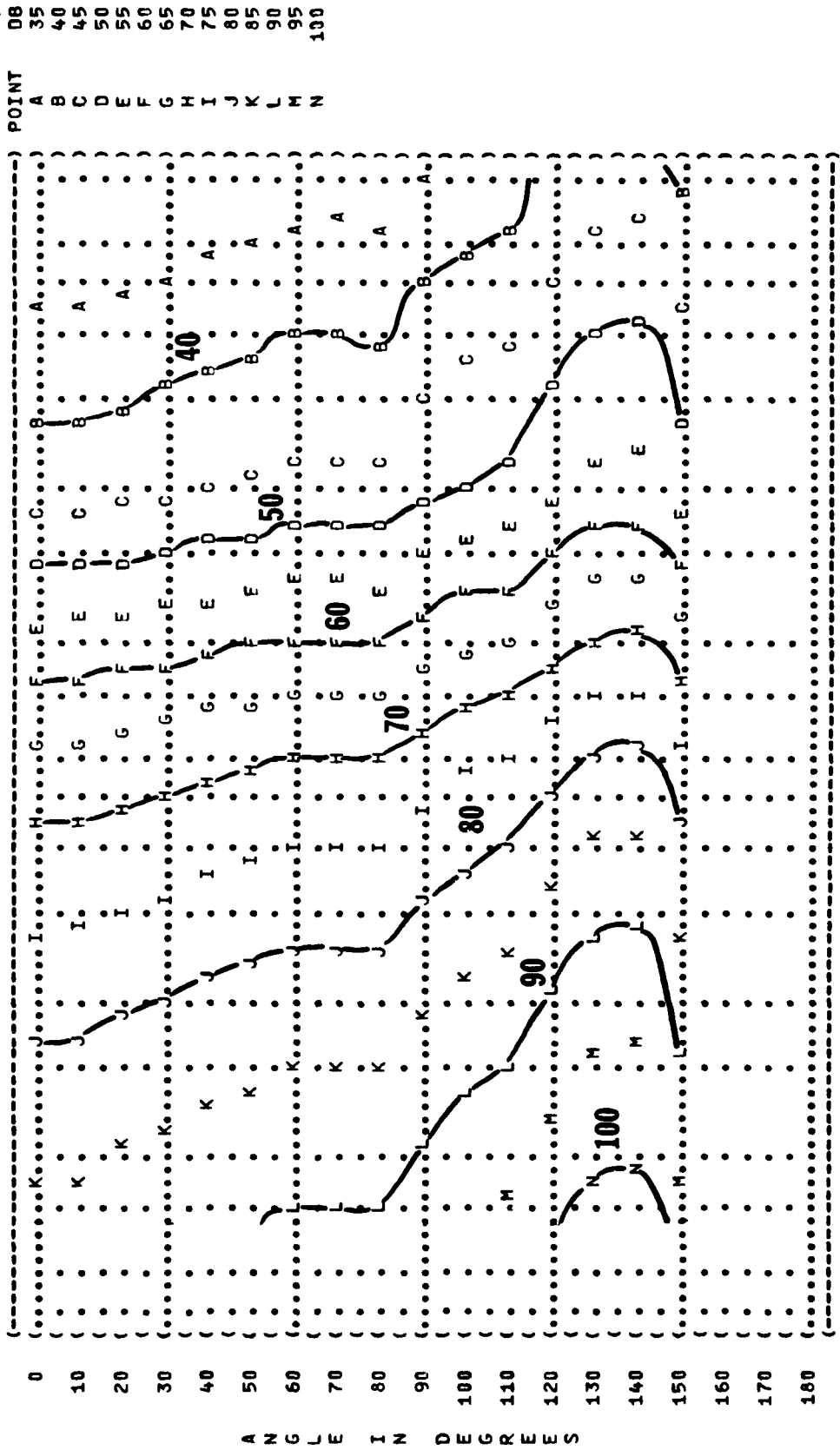
) RUN 04
)
) 22 MAR 79
)
) PAGE 18



119

DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL {SPL}
 (EQUAL LEVEL CONTOURS (DB)
 (11 63 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION: (METEOROLOGY: (POINT DB
 (C-135B AIRCRAFT (90% RPM, ENGINE NO.2 (TEMP = 15 C (A 35
 (TF33-P-5 (OTHER ENGINES IDLE (BAR PRESS = .760 M HG (B 40
 (FAR FIELD NOISE (FREE FLOW (REL HUMID = 70 % (C 45
 ((((((((D 50
 ((((((((E 55
 ((((((((F 60
 ((((((((G 65
 ((((((((H 70
 ((((((((I 75
 ((((((((J 80
 ((((((((K 85
 ((((((((L 90
 ((((((((M 95
 ((((((((N 100



IDENTIFICATION:
OMEGA 1.4
TEST AN-025-001

1) METEOROLOGY:

) RUN 04

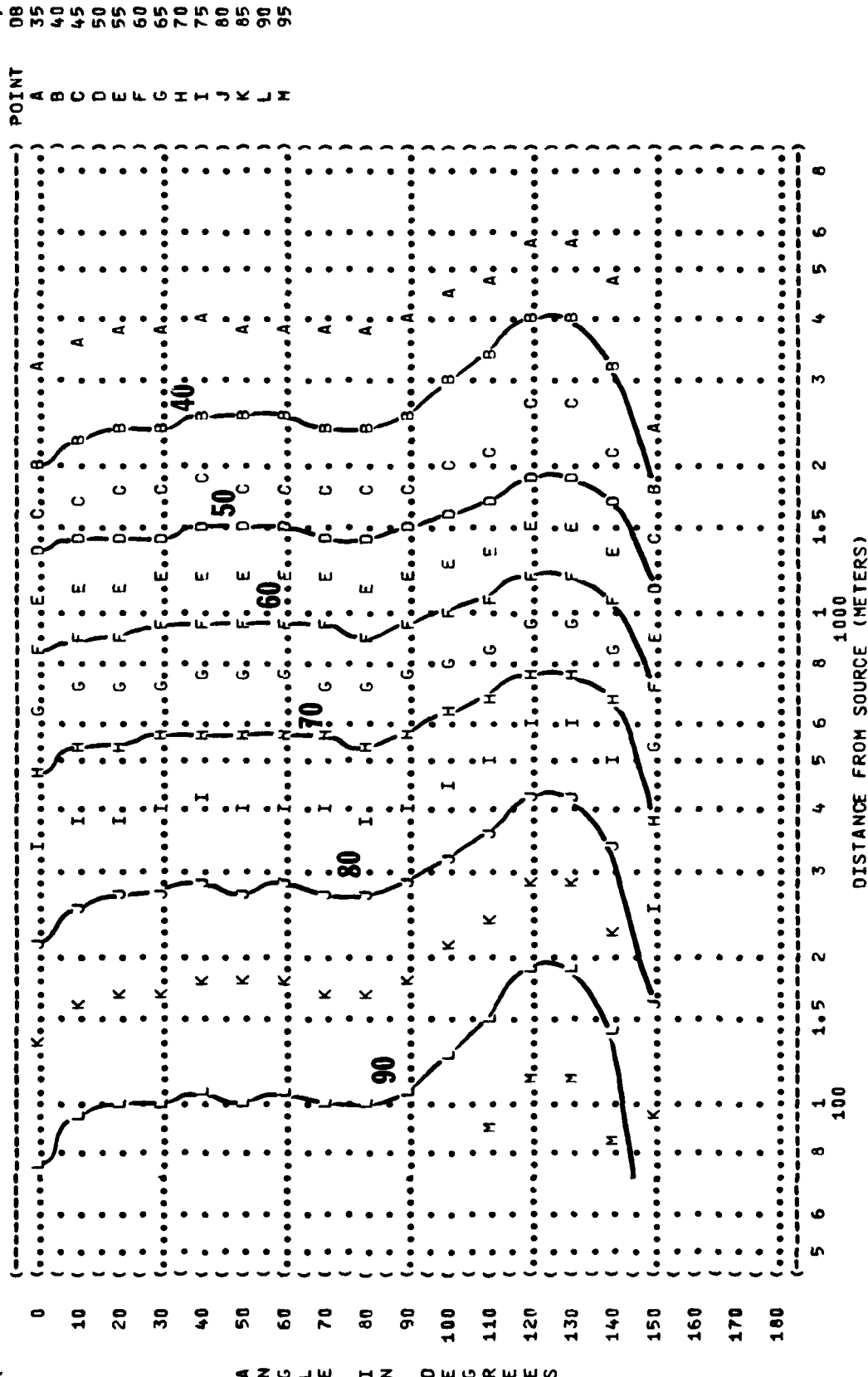
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REL HUMID = 70 %

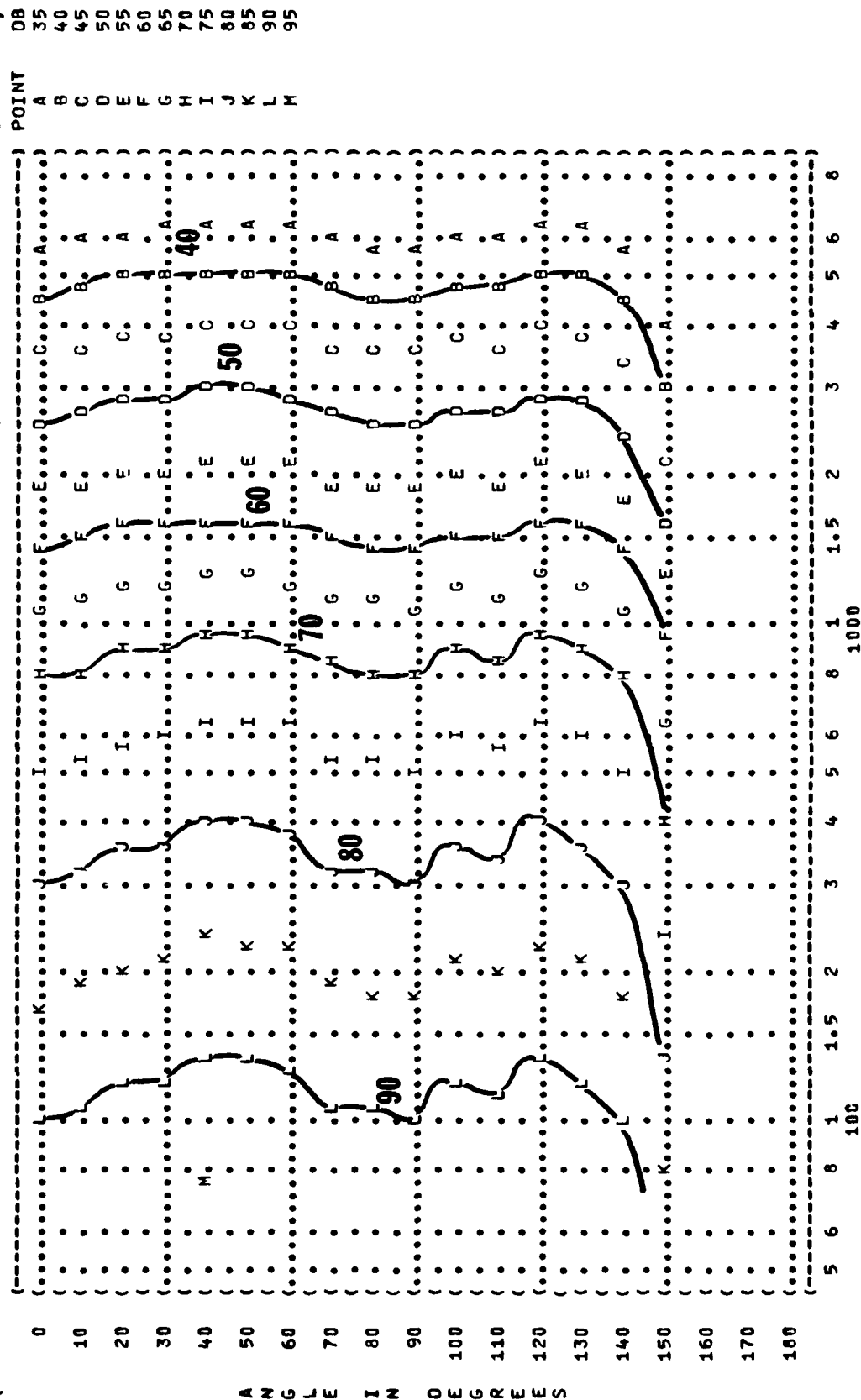
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(FIGURE: SOUND PRESSURE LEVEL (SPL)
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 (TF33-P-5 (OTHER ENGINES IDLE (BAR PRESS = .760 M HG
 (FAR FIELD NOISE (FREE FLOW (REL HUMID = 70 %
 (((((PAGE 21
 (IDENTIFICATION:
 (((OMEGA 1.4
 (TEST AN-025-001
 (RUN 04
 (22 MAR 79
 (



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 500 HZ OCTAVE BAND
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 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AN-025-001
 (RUN 04
 (22 MAR 79
 (PAGE 22



PAGE 23

REL HUMID = 70 %

OTHER ENGINES I

TF33-P-5

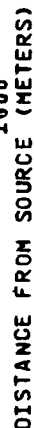
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IDENTIFICATION:
OMEGA 1.4
TEST AN-025-00

METEOROLOGY:

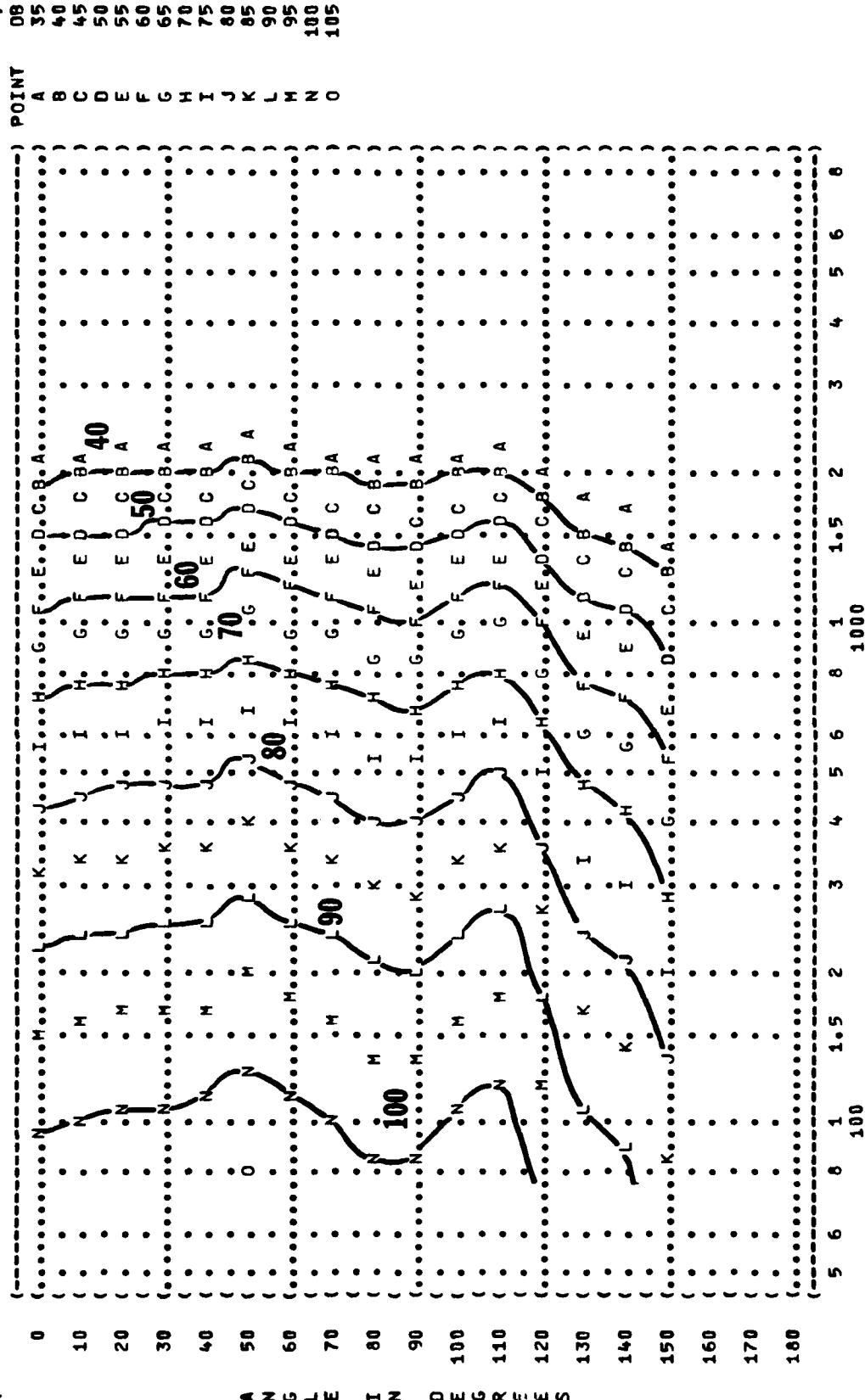
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REL HUMID = 70 %

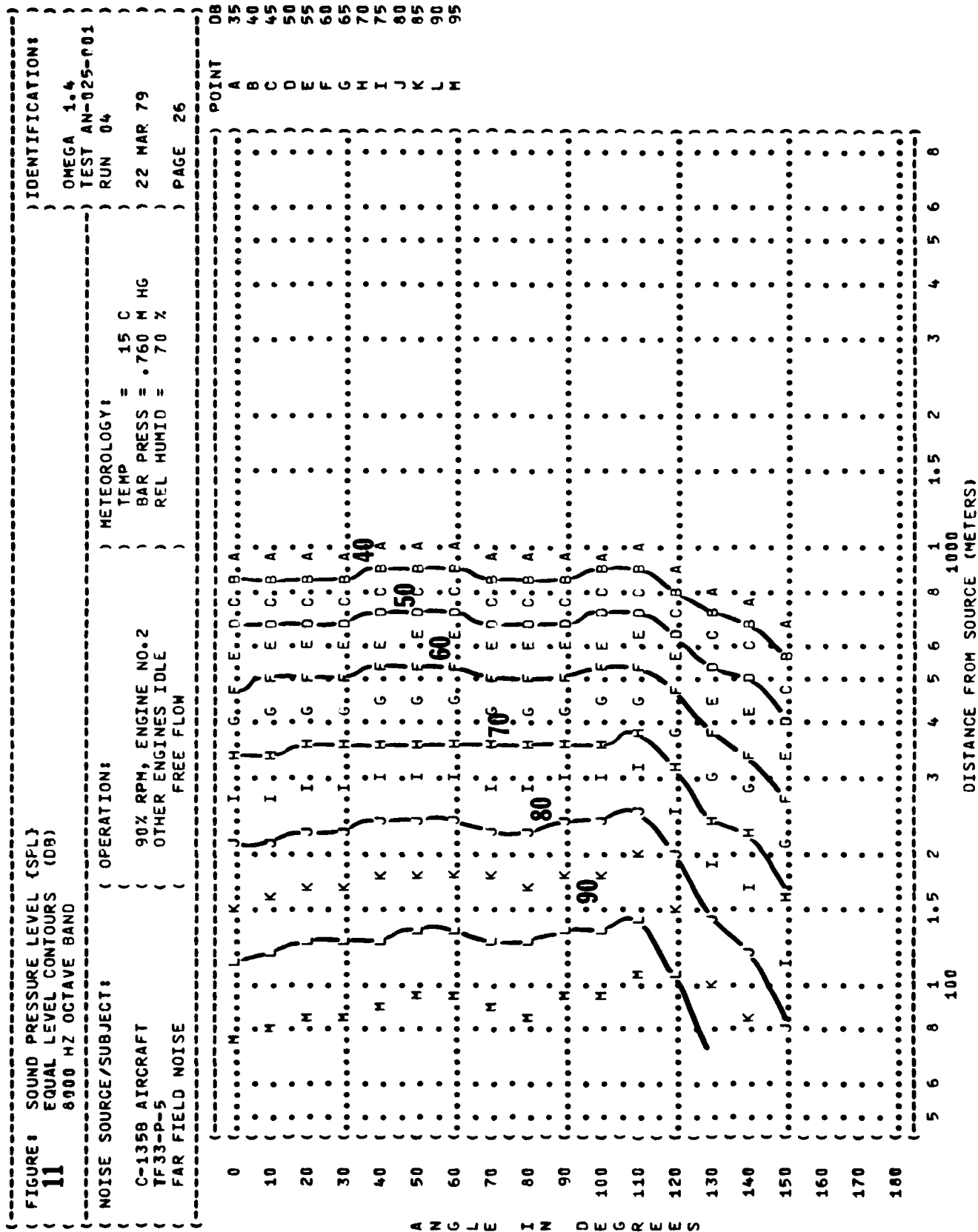
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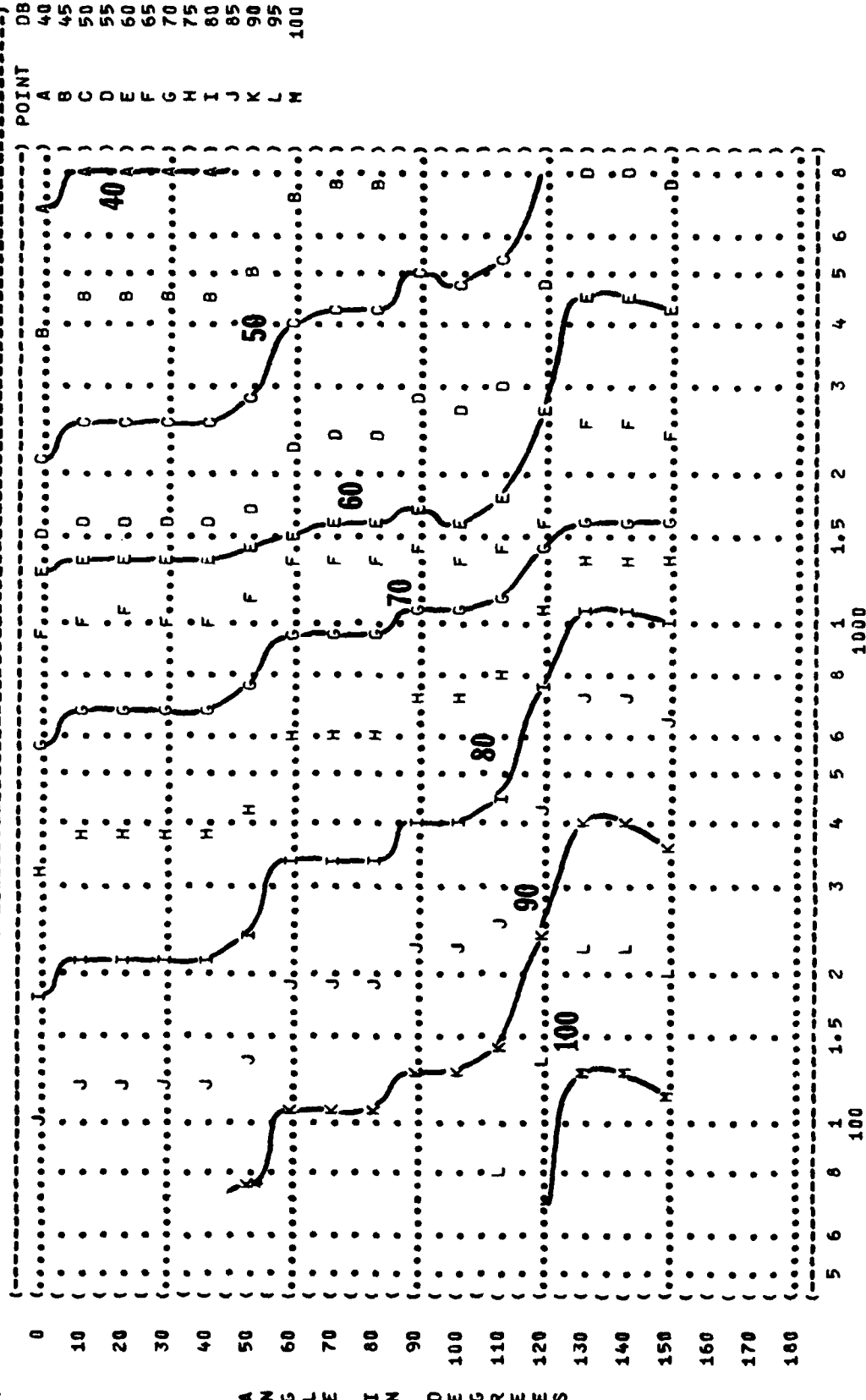
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(FIGURE: SOUND PRESSURE LEVEL (SPL)
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 (11 4000 HZ OCTAVE BAND
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 (TF33-P-5 (OTHER ENGINES IDLE
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
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 (TEST AN-025-001
 (RUN 04
 (22 MAR 79
 (PAGE 25



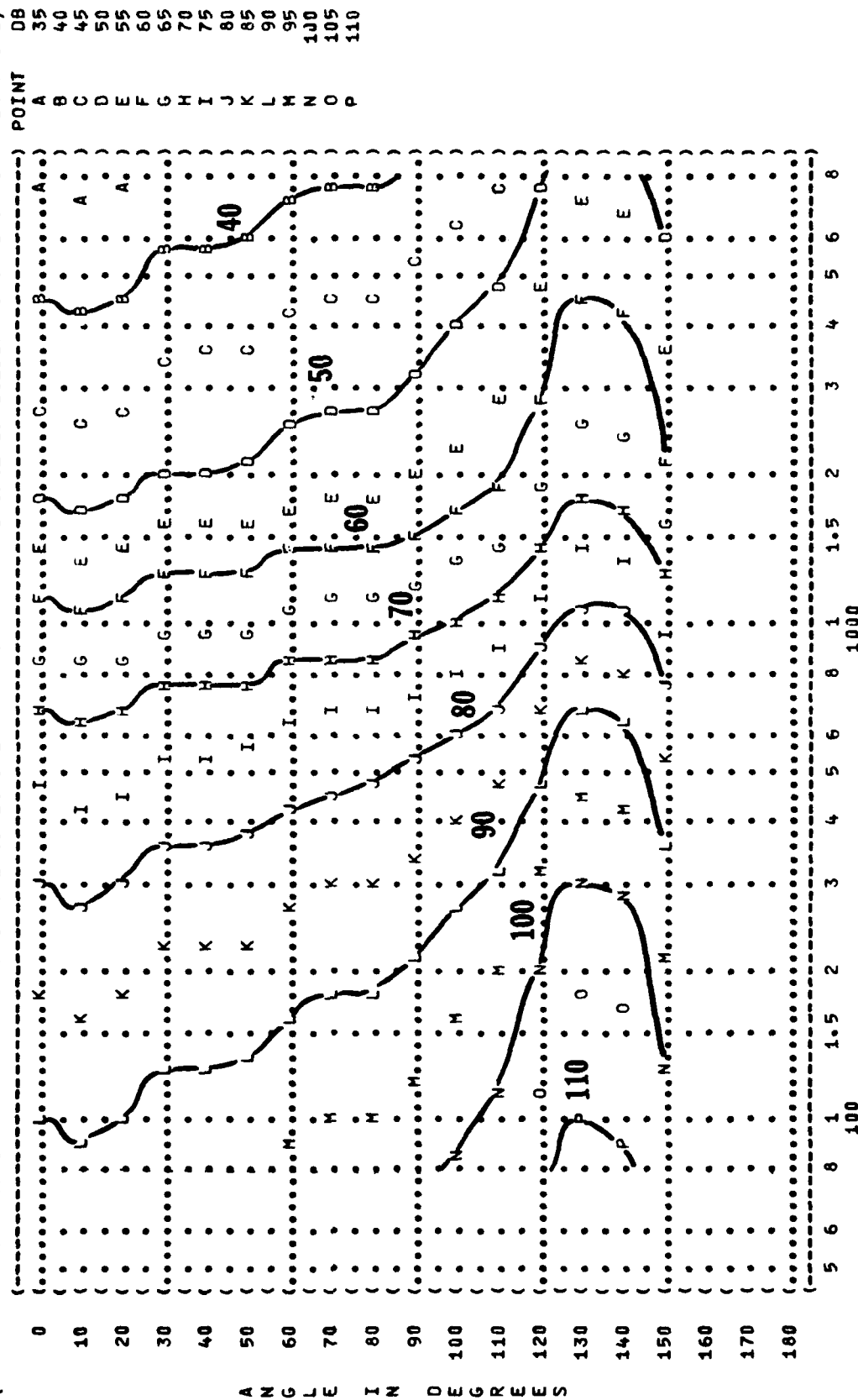


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 (BAR PRESS = .760 M HG
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 (RUN 06
 (20 NOV 79
 (PAGE 18

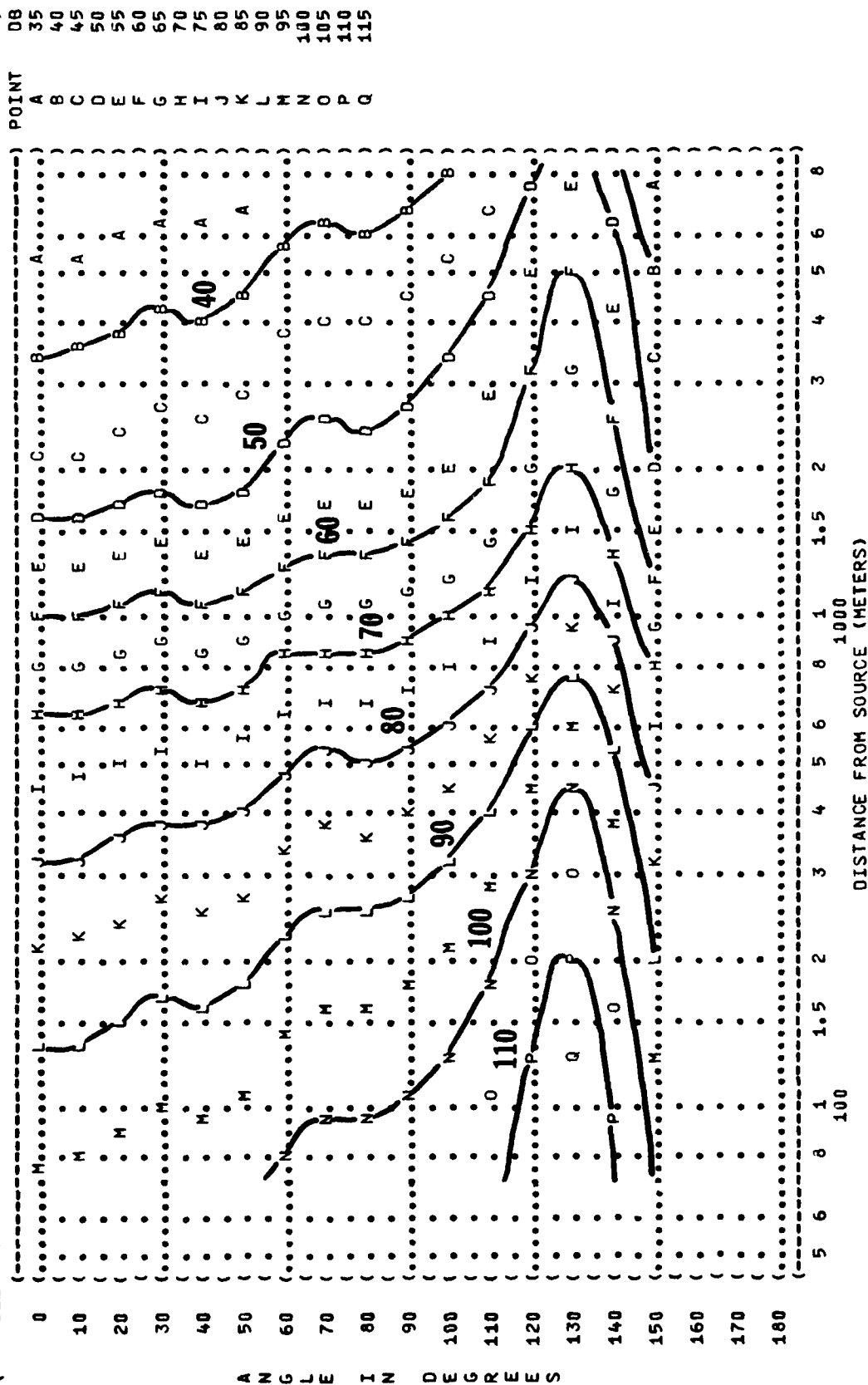


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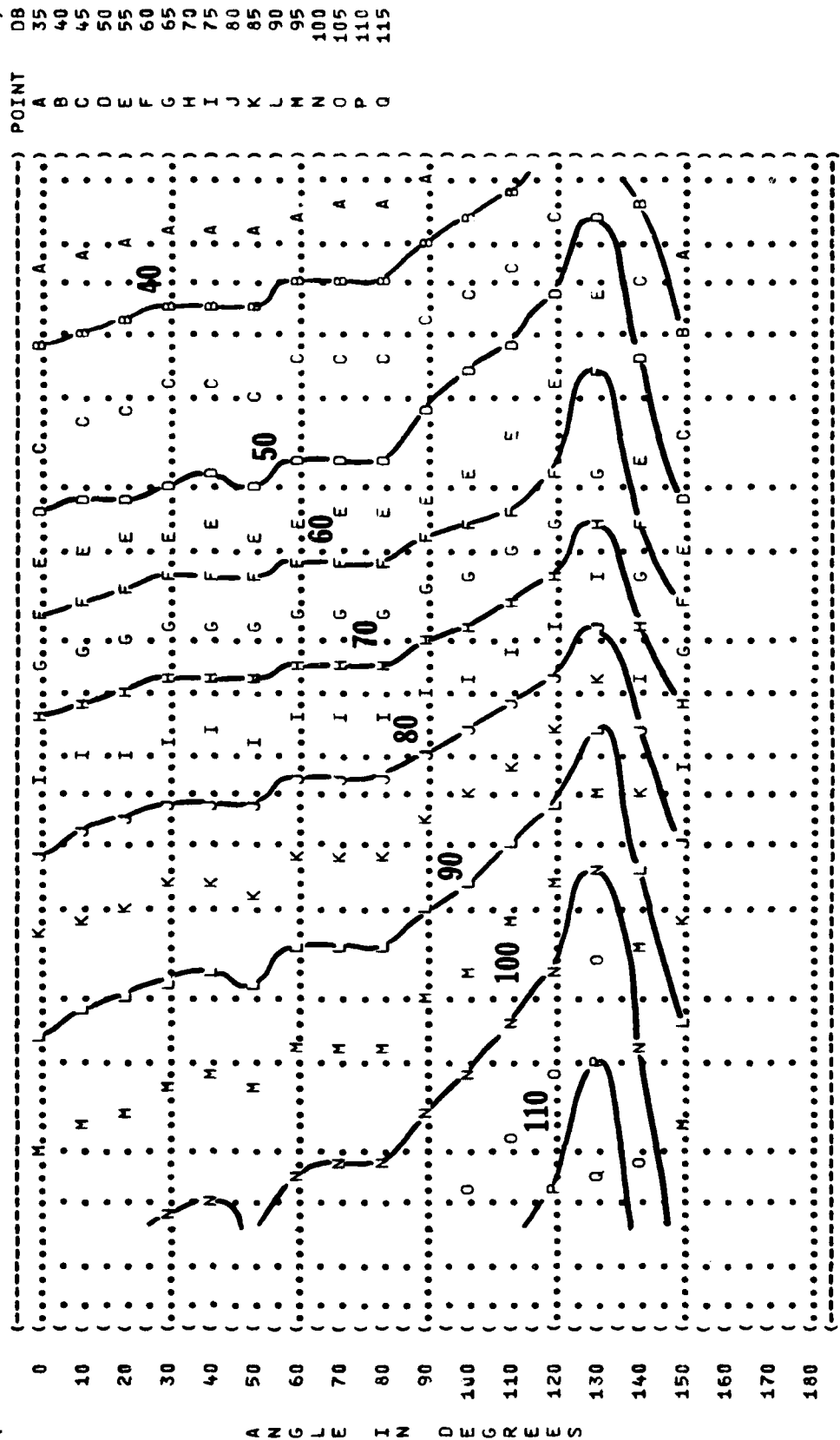
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 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (RUN 06
 (TEST AN-025-001
 (OMEGA 1.4
 (IDENTIFICATION:
 (PAGE 19



(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (125 HZ OCTAVE BAND)
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 (OPERATION:)
 (C-1358 AIRCRAFT)
 (TF33-P-5)
 (FAR FIELD NOISE)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
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 (PAGE 20)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST AN-025-001)
 (RUN 06)
 (20 NOV 79)

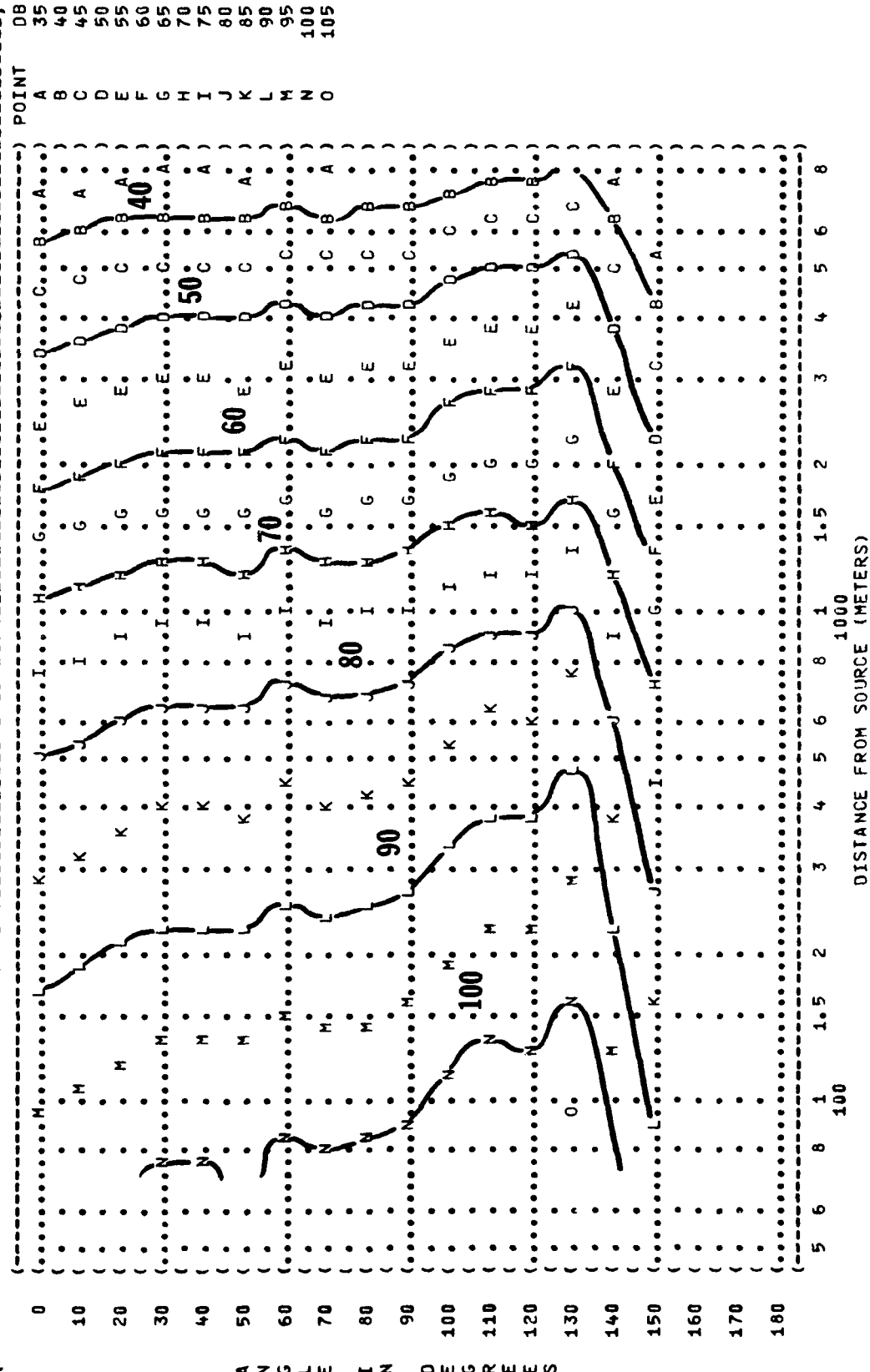


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 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 21
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 (TEST AN-025-001
 (RUN 06
 (20 NOV 79
 ()



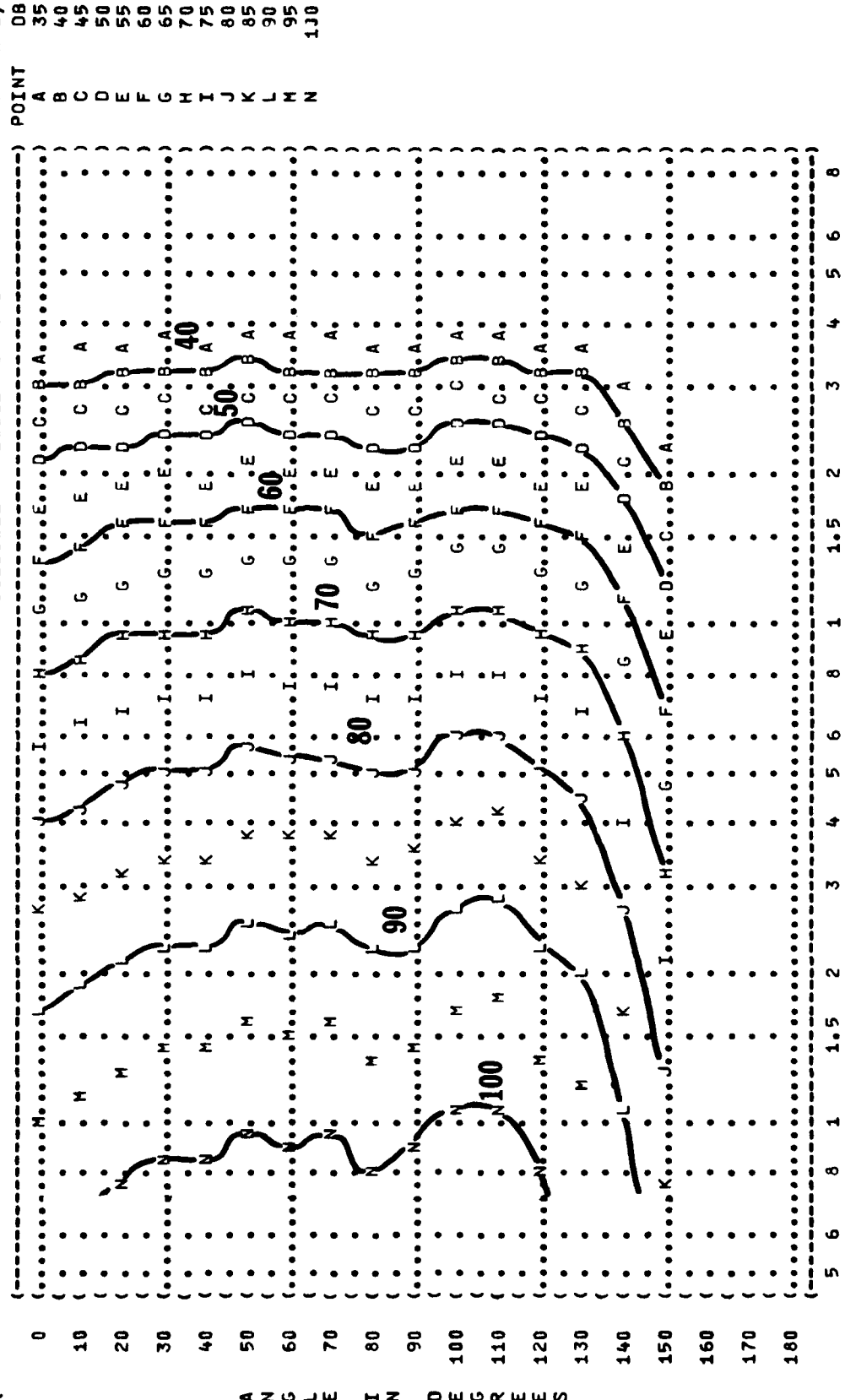
DISTANCE FROM SOURCE (METERS)

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 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY: (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 22
 (IDENTIFICATION: (OMEGA 1.4
 (TEST AN-025-001
 (RUN 06
 (20 NOV 79
 (POINT DB
 (A 35
 (B 40
 (C 45
 (D 50
 (E 55
 (F 60
 (G 65
 (H 70
 (I 75
 (J 80
 (K 85
 (L 90
 (M 95
 (N 100
 (O 105



1

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 2000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
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 (TF33-P-5 (OTHER ENGINES IDLE
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AN-025-001
 (RUN 06
 (20 NOV 79
 (PAGE 24



DISTANCE FROM SOURCE (METERS)

```

) IDENTIFICATION: )
) )
) OMEGA 1.4 )
) TEST AN-025-001 )
) RUN 06 )

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OMEGA 1.4

2 METEOROLOGY:

) RUN 06

97% RPM, ENGINE NO. 2

BAR PRESS = .760 M

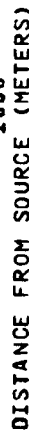
OTHER ENGINES IDLE

REL HUMID = 70 %

FREE FLOW

) PAGE 25

POINT

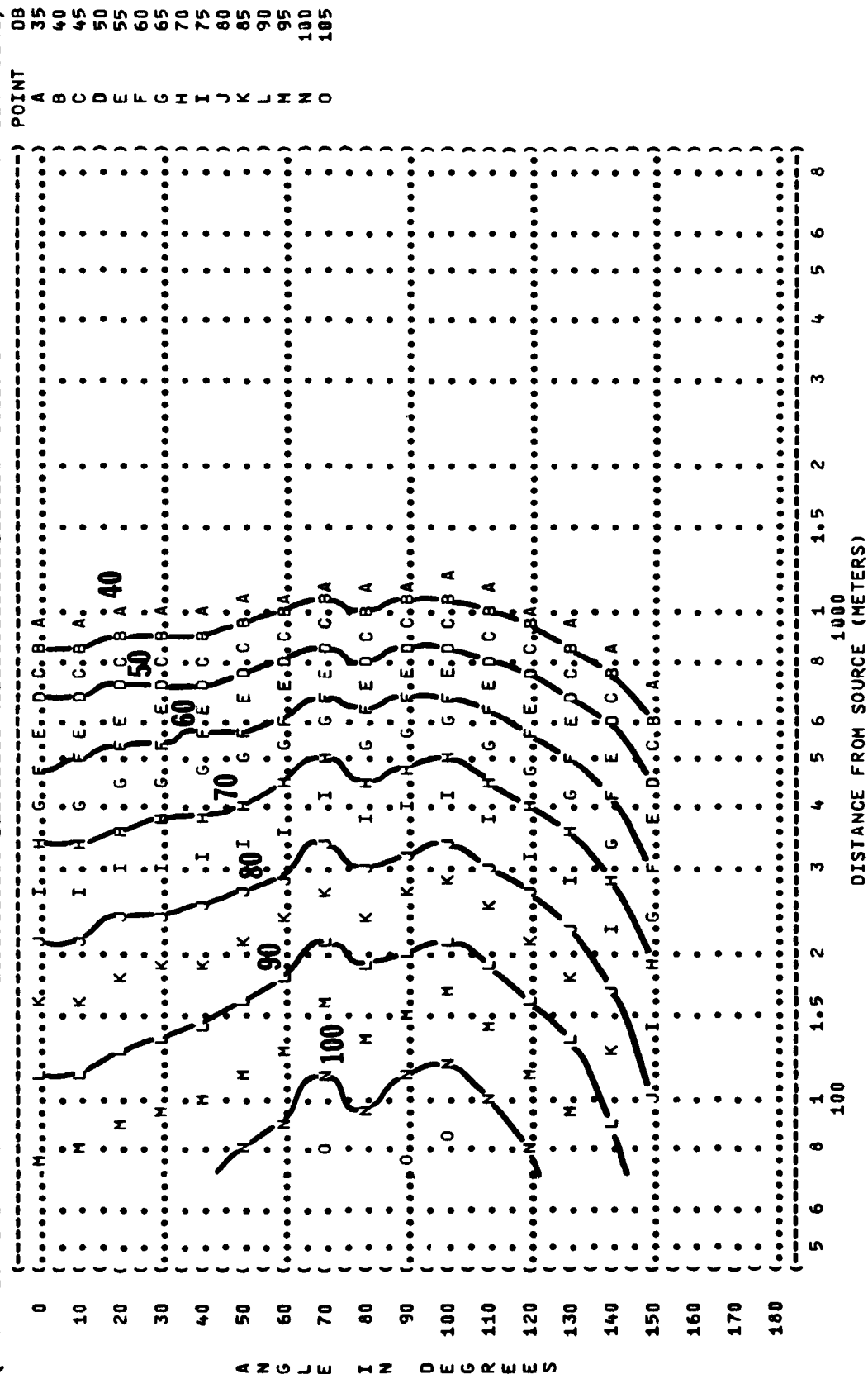


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(-----)
( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( EQUAL LEVEL CONTOURS (DB) ) )
( 11 ) OMEGA 1.4 )
( 8000 HZ OCTAVE BAND ) TEST AN-025-001 )
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) RUN 06 )
( ( ) TEMP = 15 C ) )
( C-135B AIRCRAFT ) 97% RPM,ENGINE NO.2 ) BAR PRESS = .760 M HG )
( TF33-P-5 ) OTHER ENGINES IDLE ) REL HUMID = 70 % )
( FAR FIELD NOISE ) FREE FLOW ) PAGE 26 )
(-----)

```



NOISE SOURCE/SUBJECT:	(	OPERATION:	)	METEOROLOGY:	)	RUN	05
	(		)	TEMP	=	15	C
C-135B AIRCRAFT	(	MAXIMUM POWER ENGINE NO.2	)	BAR PRESS	=	.760	M HG
TF33-P-5	(	OTHER ENGINES IDLE	)	REL HUMID	=	70	%
FAR FIELD NOISE	(	FREE FLOW	)			PAGE	18



FIGURE: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
63 HZ OCTAVE BAND

11

NOISE SOURCE/SUBJECT:

OPERATION:

METEOROLOGY:

C-135B AIRCRAFT
TF33-P-5
FAR FIELD NOISE

MAXIMUM POWER ENGINE NO.2
OTHER ENGINES IDLE
FREE FLOW

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

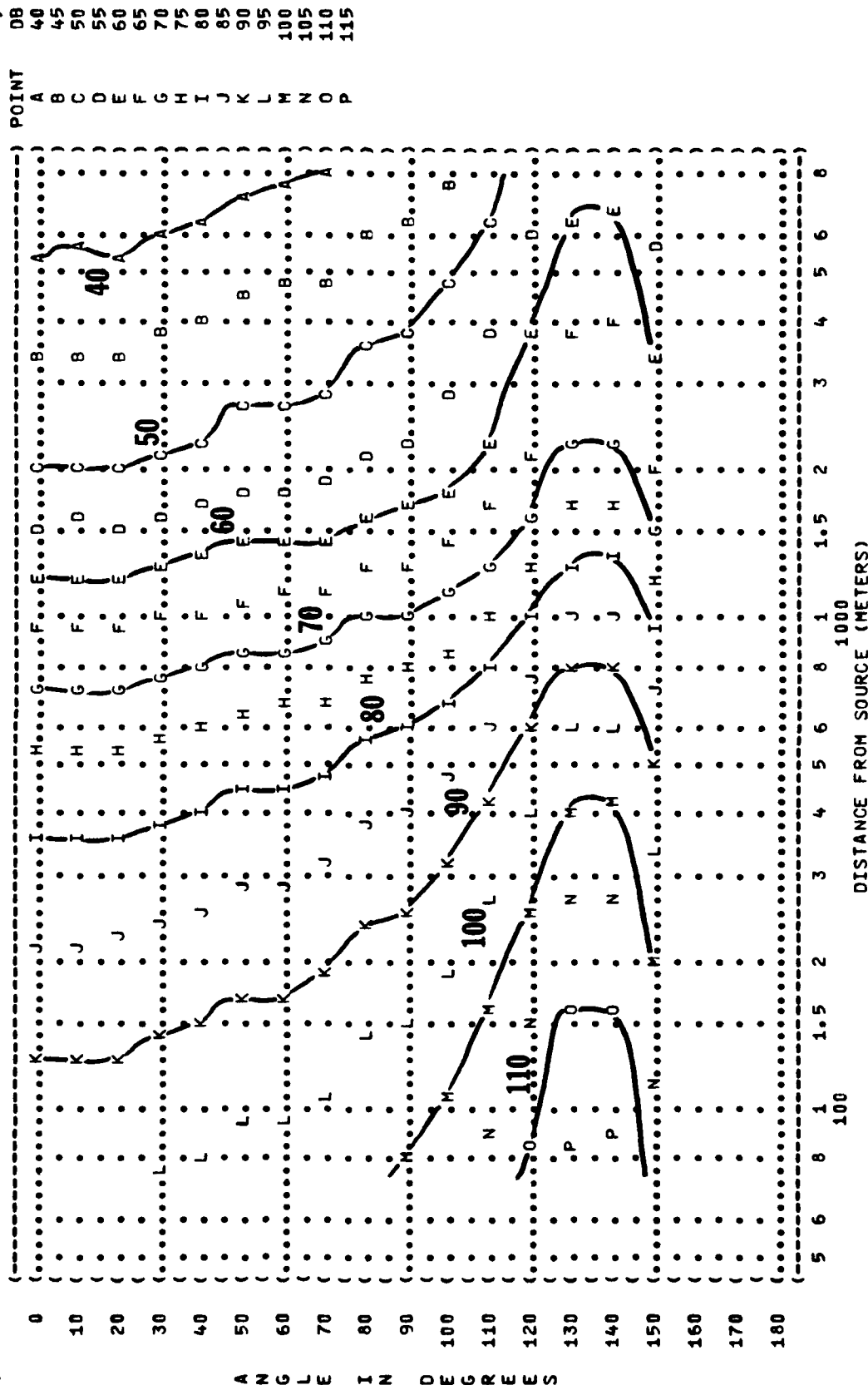
OMEGA 1.4

TEST AN-025-001

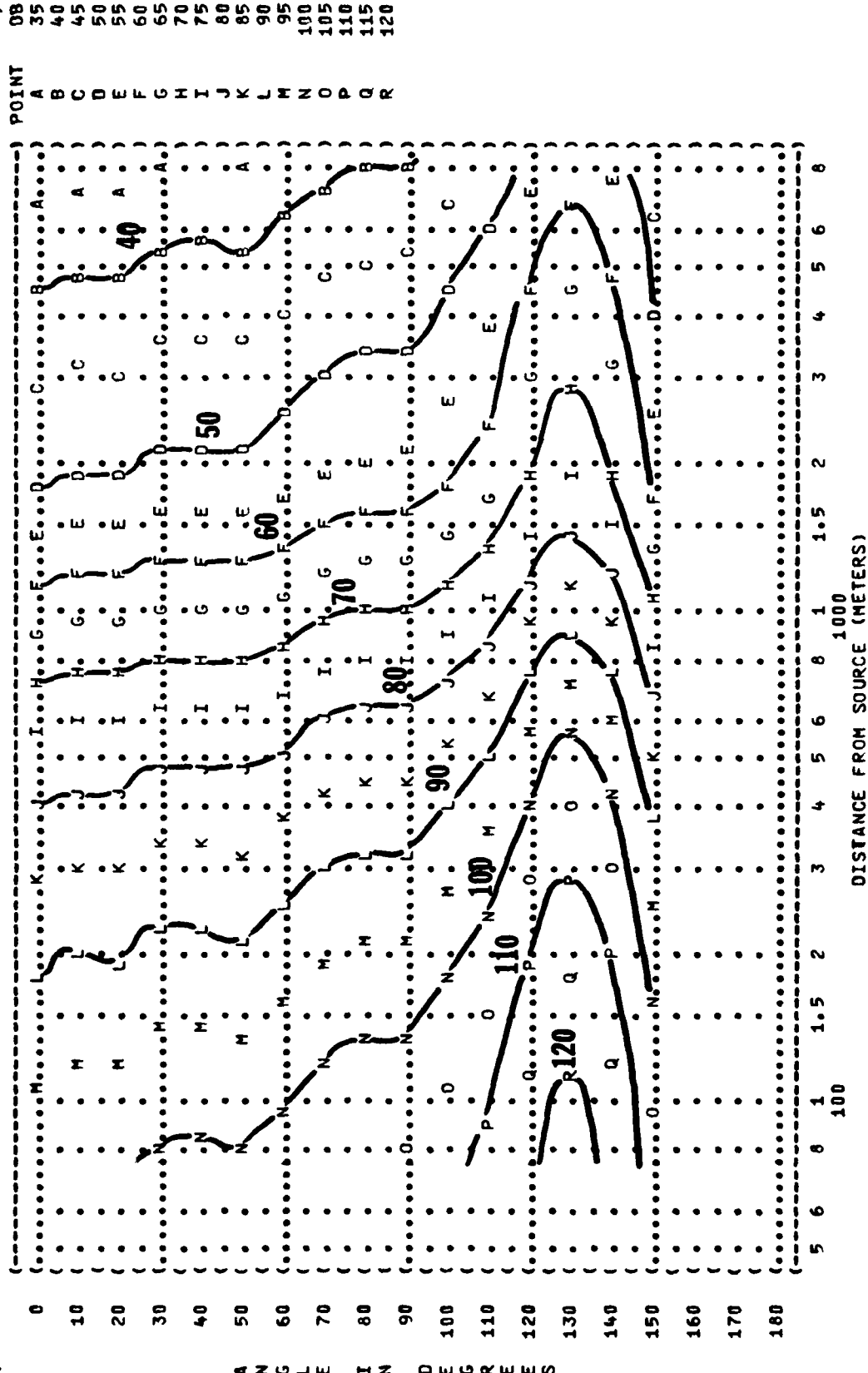
RUN 05

22 MAR 79

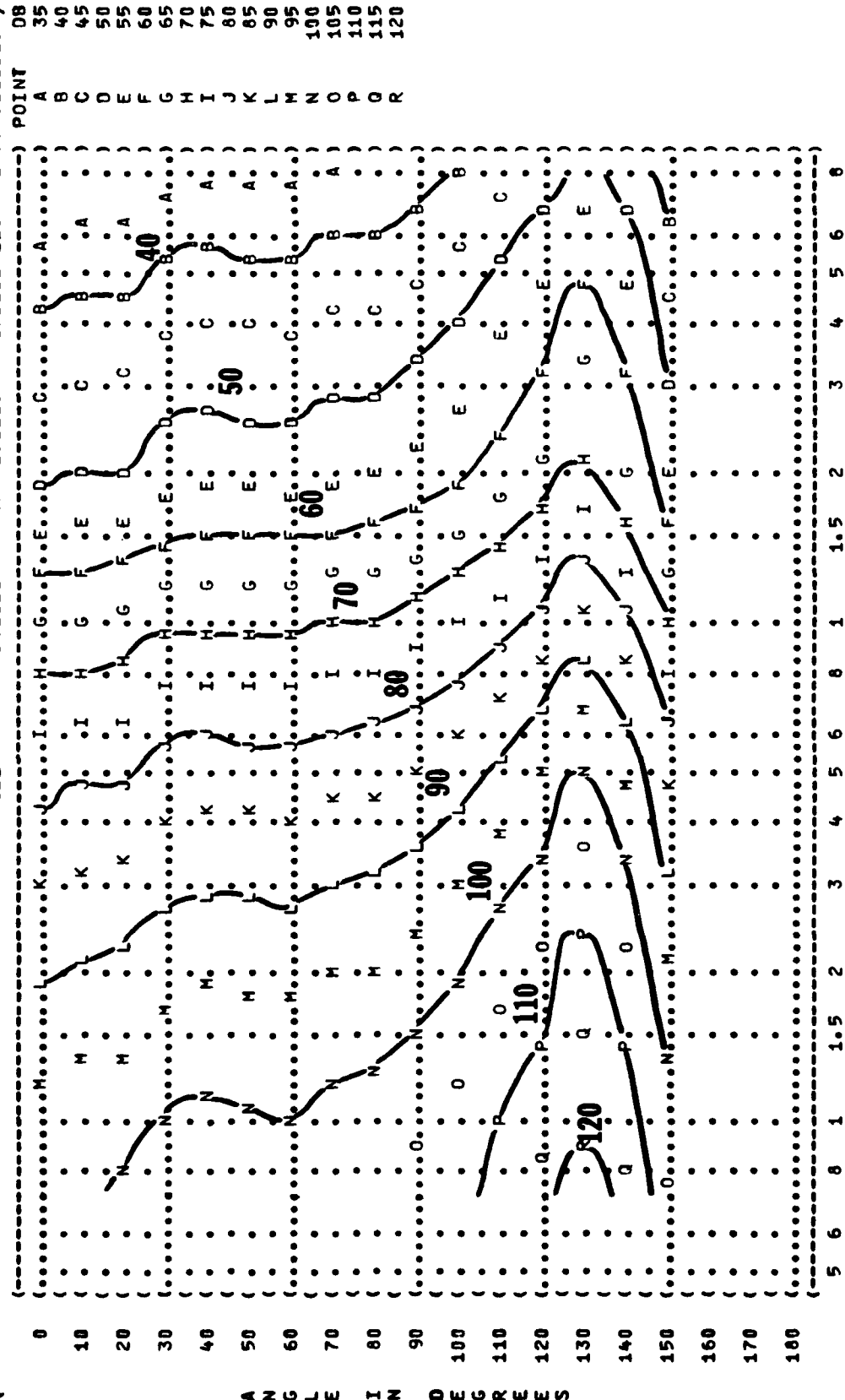
PAGE 19



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 125 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (C-135B AIRCRAFT (MAXIMUM POWER ENGINE NO.2)
 (TF33-P-5 (OTHER ENGINES IDLE)
 (FAR FIELD NOISE (FREE FLOW)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AN-025-001
 (RUN 05
 (22 MAR 79
 (PAGE 20



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (((METEOROLOGY:
 (C-135B AIRCRAFT (MAXIMUM POWER ENGINE NO.2 (TEMP = 15 C
 (TF33-P-5 (OTHER ENGINES IDLE (BAR PRESS = .760 M HG
 (FAR FIELD NOISE (FREE FLOW (REL HUMID = 70 %
 (((PAGE 21
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AN-025-001
 (RUN 05

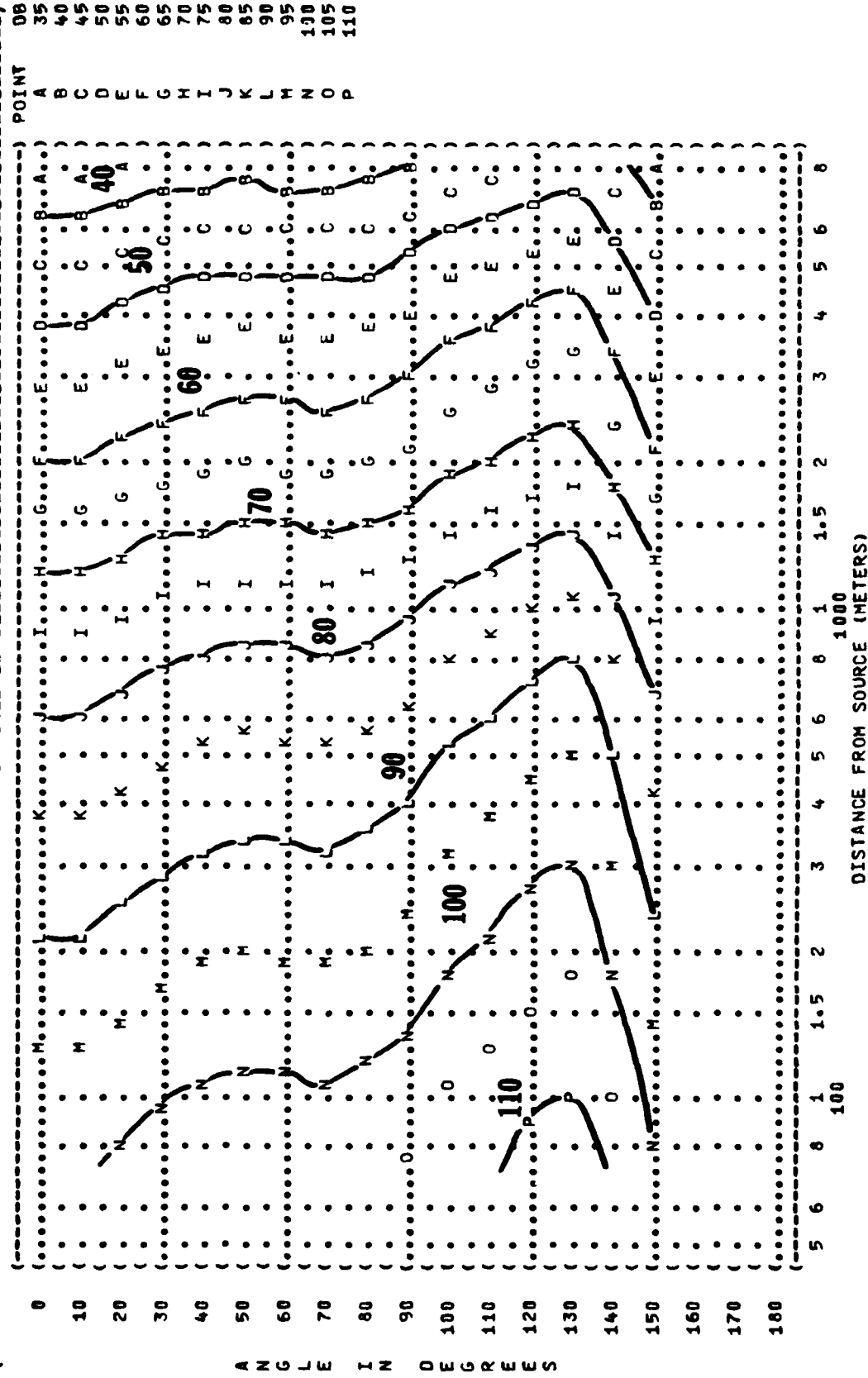


A N G L E I N D E R E E S

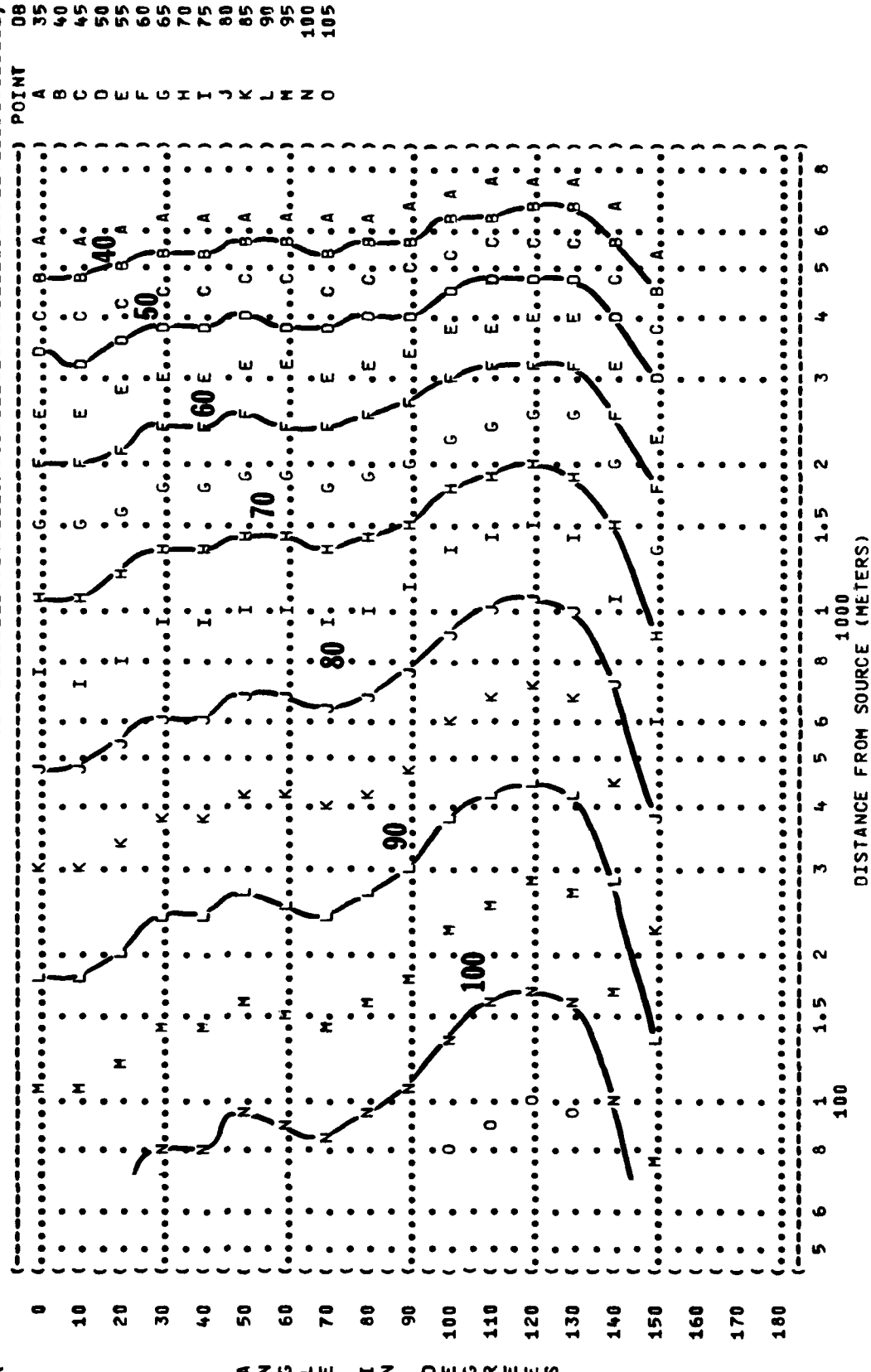
FIGURE: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
11 500 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST AN-025-001
RUN 05

NOISE SOURCE/SUBJECT:
OPERATION:
C-135B AIRCRAFT
TF33-P-5
FAR FIELD NOISE
MAXIMUM POWER ENGINE NO.2
OTHER ENGINES IDLE
FREE FLOW
METEROLOGY:
TFMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %
22 MAR 79
PAGE 22



(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (1000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (OPERATION:)
 (C-135B AIRCRAFT)
 (TF33-P-5)
 (FAR FIELD NOISE)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (FREE FLOW)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST AN-025-001)
 (RUN 05)
 (22 MAR 79)
 (PAGE 23)



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (4000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION: (METEOROLOGY: (POINT DB
 (C-135B AIRCRAFT (MAXIMUM POWER ENGINE NO.2) TEMP = 15 C) A 35
 (TF33-P-5 (OTHER ENGINES IDLE) BAR PRESS = .760 M HG) B 40
 (FAR FIELD NOISE (FREE FLOW) REL HUMID = 70 %) C 45
 ())) D 50
 ())) E 55
 ())) F 60
 ())) G 65
 ())) H 70
 ())) I 75
 ())) J 80
 ())) K 85
 ())) L 90
 ())) M 95
 ())) N 100
 ())) O 105
 ())) P 110

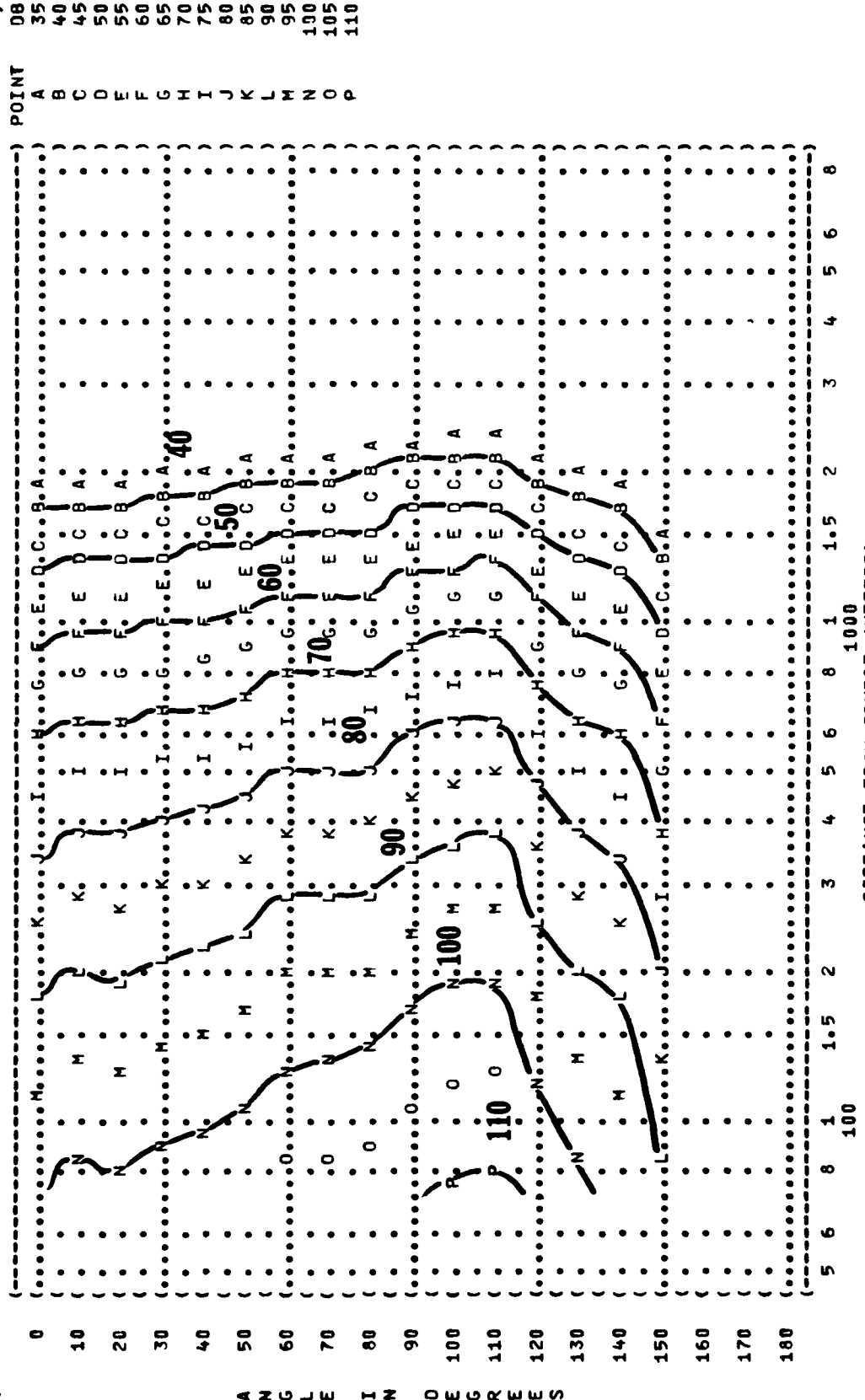
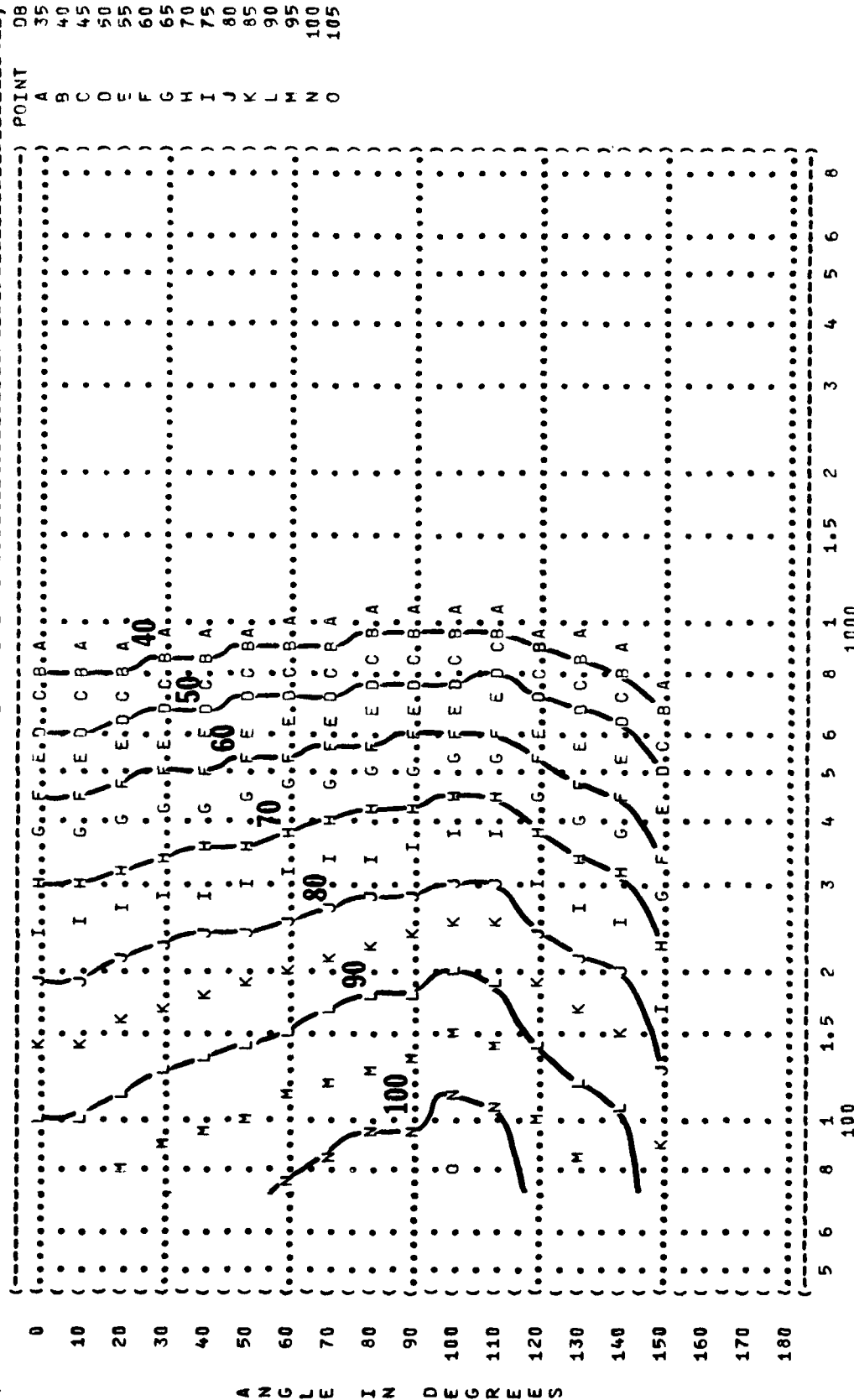


FIGURE 1 SOUND PRESSURE LEVEL (SPL)
 EQUAL LEVEL CONTOURS (DB)
 8000 HZ OCTAVE BAND
 NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:)
 C-135B AIRCRAFT (MAXIMUM POWER ENGINE NO.2) TEMP = 15 C)
 TF33-P-5 (OTHER ENGINES IDLE) BAR PRESS = .760 M HG)
 FAR FIELD NOISE (FREE FLOW) REL HUMID = 70 %)
 IDENTIFICATION:)
 OMEGA 1.4)
 TEST AN-025-001)
 RUN 05)
 PAGE 26)



ND-A087 953

USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK VOLUME 119
C-135B AIRCRAFT NEAR. (U) AIR FORCE AEROSPACE MEDICAL
RESEARCH LAB WRIGHT-PATTERSON AFB. R G POWELL DEC 79
AMRL-TR-75-50-VOL-119 F/G 1/2

3.3

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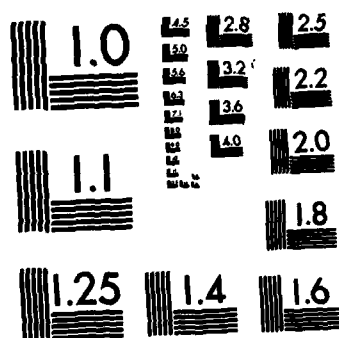


END

FILED

1

DEC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

SUPPLEMENTARY

INFORMATION

AD-4087953

NOTE AND ERRATA

FROM: AFAMRL/BBE
Wright-Patterson AFB OH 45433

TO: USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK USERS

1. This box contains 19 volumes (Batch #7) of AMRL-TR-75-50, USAF Bioenvironmental Noise Data Handbook.
2. An updated Handbook Index will be published and sent to you within six months.
3. This office will no longer publish or be responsible for any additional handbook volumes. Questions concerning any data published in the handbook by AFAMRL will be answered by calling AUTOVON 785-3605 or commercial (513) 255-3605.
4. ERRATA:
 - (1) ~~A pen and ink change to Volume 62, page 4; first line, change "helicopter" to "aircraft".~~
 - (2) Replace pages 10, 11, and 12 of Volume 119 (C-135B) with pages enclosed in this box.
 - (3) ~~Replace pages 10, 11, and 12 of Volume 138 (F-102A) with pages enclosed in this box.~~

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND

2

IDENTIFICATION:
OMEGA 3.2
TEST 77-001-002
RUN 01
28 SEP 82
PAGE F1

NOISE SOURCE/SUBJECT: (OPERATION:

C-155B AIRCRAFT (

GROUND CREW (

NEAR FIELD NOISE LEVELS (

LOCATION/CONDITION

1/A 2/B 4/C 3/D 5/E 6/F 7/F 8/F 9/F 10/F 11/F 10/G 11/H

FREQ
(HZ)

25	71	79	79	84	80	86	88	85	93	86	89	98	104
31.5	73	80	81	89	83	87	94	90	93	89	90	98	100
40	81	84	83	88	87	89	96	92	94	90	93	101	103
50	93	85	85	88	88	90	95	91	96	89	96	101	103
63	95	87	88	87	88	87	92	89	93	88	93	102	106
80	90	87	91	86	87	87	90	86	90	84	92	101	109
100	102	96	94	92	93	94	93	92	96	90	103	99	106
125	102	98	96	93	94	91	95	94	94	91	97	101	105
160	94	98	92	92	90	90	94	95	92	91	95	101	106
200	101	96	92	89	91	90	95	93	100	90	95	101	107
250	103	93	92	88	91	91	95	92	96	89	96	102	104
315	99	96	93	88	92	91	93	92	93	87	98	103	105
400	95	100	98	90	94	92	95	98	95	90	100	105	108
500	90	96	100	97	99	103	98	98	97	92	102	102	113
630	89	93	93	96	100	100	96	95	98	91	101	103	113
800	91	91	97	94	97	97	94	93	97	91	102	102	113
1000	86	86	98	99	101	102	97	96	100	94	105	106	115
1250	83	84	95	98	100	99	95	95	99	91	103	107	115
1600	85	86	95	98	101	101	96	98	99	92	102	110	117
2000	86	91	97	105	108	107	103	107	106	99	112	113	121
2500	81	90	94	97	101	99	96	98	100	92	102	124	129
3150	82	94	97	99	103	102	99	99	101	96	103	112	119
4000	81	94	98	98	101	100	98	99	103	96	103	114	123
5000	79	93	96	97	99	98	97	97	99	94	102	119	129
6300	78	95	95	96	98	98	96	96	98	93	103	117	125
8000	73	105	98	98	98	97	98	101	98	93	100	119	128
10000	67	102	93	93	92	91	93	101	93	88	97	112	122
OVERALL	109	110	109	111	113	113	111	112	113	107	116	128	135

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

AWRL-TR-75-50, Volume 119

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)													
2													
IDENTIFICATION:													
OMEGA 3.2													
TEST 77-001-002													
RUN 01													
28 SEP 82													
PAGE J1													
NOISE SOURCE/SUBJECT: (OPERATION:													
C-135B AIRCRAFT (
GROUND CREW (
NEAR FIELD NOISE LEVELS (
LOCATION/CONDITION													
1/A 2/B 4/C 3/D 5/E 6/F 7/F 8/F 9/F 10/F 11/F 10/G 11/H													
FREQ (HZ)													
31.5	82	86	86	92	89	92	99	95	98	93	96	104	107
63	98	91	93	92	92	93	98	94	98	92	99	106	111
125	105	102	99	97	97	97	99	99	99	95	104	105	110
250	106	100	97	93	96	95	99	97	102	94	101	107	110
500	97	102	103	100	103	105	101	102	102	96	106	108	117
1000	93	93	102	102	104	105	100	100	104	97	108	110	119
2000	89	94	100	107	109	108	104	108	108	100	113	124	130
4000	86	98	102	103	106	105	103	103	106	100	107	121	130
8000	79	107	101	101	102	101	101	105	102	97	105	122	130
OVERALL	109	110	109	111	113	113	111	112	113	107	116	128	135

TABLE: MEASURES OF HUMAN NOISE EXPOSURE

3

IDENTIFICATION:

OMEGA 3.2

TEST 77-001-002

RUN 01

28 SEP 82

PAGE H1

NOISE SOURCE/SUBJECT: (OPERATION:)

C-135B AIRCRAFT ()

GROUND CREW ()

NEAR FIELD NOISE LEVELS ()

()

LOCATION/CONDITION

1/A 2/B 4/C 3/D 5/E 6/F 7/F 8/F 9/F 10/F 11/F 10/G 11/H

HAZARD/PROTECTION

C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR

A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR

MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

NO PROTECTION

OASLC 109 109 109 110 113 112 110 111 112 106 116 127 134

OASLA 101 108 108 111 113 113 110 112 112 106 116 128 135

T 25 8 8 4.5 3.2 3.2 5 3.8 3.8 11 P P P

MINIMUM OPL EAR MUFFS

OASLA* 87 86 84 84 86 86 85 86 86 80 90 101 109

T 285 339 480 480 339 339 404 339 339 960 170 25 6

AMERICAN OPTICAL 1700 EAR MUFFS

OASLA* 82 82 79 78 80 80 79 81 81 75 84 95 103

T 679 679 960 960 960 960 960 807 807 960 480 71 18

U-51R EAR PLUGS

OASLA* 79 81 82 82 84 85 81 82 84 78 88 96 104

T 960 807 679 679 480 404 807 679 480 960 240 60 15

AMERICAN OPTICAL 1700 EAR MUFFS PLUS U-51R EAR PLUGS

OASLA* 65 68 68 69 71 71 68 69 70 64 75 85 93

T 960 960 960 960 960 960 960 960 960 960 404 101

H-139 GROUND COMMUNICATION UNIT

OASLA* 76 79 80 83 86 85 82 83 84 78 88 101 107

T 960 960 960 571 339 404 679 571 480 960 240 25 9

COMMUNICATION

PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)

PSIL 93 96 102 103 106 106 102 103 104 98 109 114 122

ANNOYANCE

PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB)

TONE CORRECTION (C IN DB)

PNLT 116 123 124 126 129 129 126 129 128 122 134 146 152

C 1 1 2 2 3 2 2 3 2 2 3 4 3

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.

P ADDITIONAL EAR PROTECTION REQUIRED.